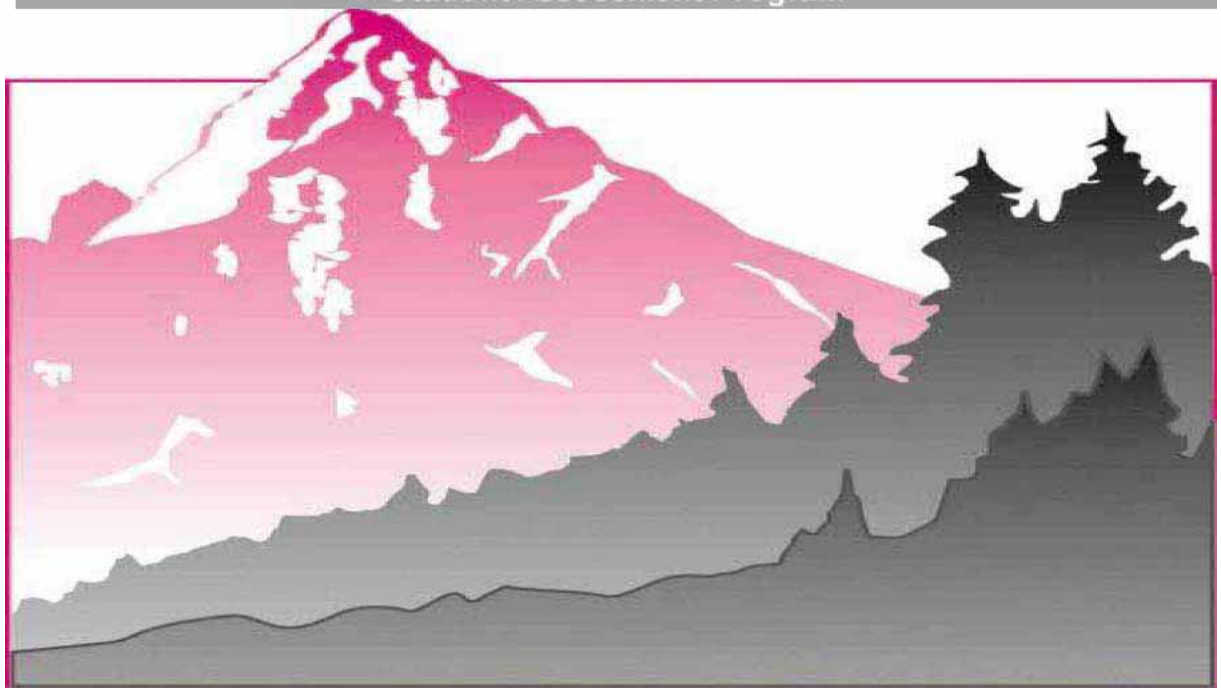
COLORADO

Student Assessment Program



2005 CSAP Released Items and Scoring Information

Grades 3 and 4 Mathematics

CSAP

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Table of Contents

2005 Mathematics Released Item Scoring Packet

The 2005 Mathematics Released Item Scoring Packet begins with the general holistic rubrics which are guides in developing the specifics for each item's scoring. Since these same general rubrics are used for all items at all levels, they appear only once at the beginning of the packet.

Each Released Item includes:

1. **A blank form of the item**
2. **Item Exemplary Response and Information Sheet**
3. **SIR Form**
4. **Anchor Papers**
5. **Discussion Papers**
6. **Scoring Annotation Sheet**

Item Exemplary Response and Information Sheet: The exemplary response given only presents one or at most two examples of a response that would receive full credit. It does not imply that the method(s) shown is either the best method of solution or the one that is most often used by students. You will notice that each part includes the note, "OR - Other valid response (process, explanation, method)". This means that any method that is both mathematically valid and leads to a correct answer will be given full credit.

SIR (Scoring Issues Resolution) Form: A SIR form is created for each constructed response item on a math CSAP test. It characterizes more fully what requirements a student paper must contain to be given a particular score.

Anchor Papers: One characteristic student paper is selected for each possible score point for an item. These papers are used as a reference throughout the scoring process.

Discussion Papers: These are student papers that don't always fit neatly into one of the scoring categories. Colorado teachers work with the Scoring Supervisors for CTB to resolve these issues prior to the start of scoring. These resolutions are compiled and summarized on the SIR form.

Scoring Annotation Sheet: This sheet indicates why each of the discussion papers included in the packet was given the score it received.

Colorado Department of Education
Unit of Student Assessment

4 - Point Rubric for Extended Constructed-Response Items

This rubric is used to score students' responses to extended constructed-response items. These items require the student to use problem-solving skills that may require the construction of a graph or a model, the extension of a pattern, or the use of geometric relationships and spatial reasoning. These items may also include an explanation of reasoning, evaluation of methods, or application to real-world situations.

There are several extended constructed-response items in CSAP, each taking approximately 15 minutes to complete. Each extended constructed-response item receives a single score of 0, 1, 2, 3 or 4 points.

4 Points

The response accomplishes the prompted purpose and effectively communicates the student's mathematical understanding. The student's strategy and execution meet the content (including concepts, technique, representations, and connections), thinking processes and qualitative demands of the task. Minor omissions may exist, but do not detract from the correctness of the response.

3 Points

The response provides adequate evidence of the learning and strategic tools necessary to complete the prompted purpose. It may contain overlooked issues, misleading assumptions, and/or errors in execution. Evidence in the response demonstrates that the student can revise the work to accomplish the task with the help of written feedback. The student does not need a dialogue or additional instructions.

2 Points

The response partially completes the task, but lacks adequate evidence of the learning and strategic tools that are needed to accomplish the prompted purpose. It is not clear that the student is ready to revise the work without more instruction.

1 Point

The response demonstrates some evidence of mathematical knowledge that is appropriate to the intent of the prompted purpose. An effort was made to accomplish the task, but with little success. Minimal evidence in the response demonstrates that with instruction the student can revise the work to accomplish the task.

0 Points

The response lacks any evidence of mathematical knowledge that is appropriate to the intent of the task.

Colorado Department of Education
Unit of Student Assessment

3 - Point Rubric for Medium Constructed-Response Items

This rubric is used to score students' responses to medium constructed-response items. These items require the student to use problem-solving skills that may require the construction of a graph or a model, the extension of a pattern, or the use of geometric relationships and spatial reasoning. These items may also include an explanation of reasoning, evaluation of methods, or application to real-world situations.

There are several medium constructed-response items in CSAP, each taking approximately 10 minutes to complete. Each extended constructed-response item receives a single score of 0, 1, 2, or 3 points.

3 Points

The response accomplishes the prompted purpose and effectively communicates the student's mathematical understanding. The student's strategy and execution meet the content (including concepts, technique, representations, and connections), thinking processes and qualitative demands of the task. Minor omissions may exist, but do not detract from the correctness of the response.

2 Points

The response demonstrates adequate evidence of the learning and strategic tools necessary to complete the prompted purpose. It may contain overlooked issues, misleading assumptions, and/or errors in execution. Evidence in the response demonstrates that the student can revise the work to accomplish the task with the help of written feedback or dialogue.

1 Point

The response demonstrates some evidence of mathematical knowledge that is appropriate to the intent of the prompted purpose. An effort was made to accomplish the task, but with little success. Evidence in the response demonstrates that with instruction the student can revise the work to accomplish the task.

0 Points

The response lacks any evidence of mathematical knowledge that is appropriate to the intent of the task.

Colorado Department of Education
Unit of Student Assessment

2 - Point Rubric for Short Constructed-Response Items

This rubric is used to score students' responses to short constructed-response items. These items require the students to use problem-solving skills as they apply to all of the Colorado Model Content Standards for mathematics. An item may ask the student to include and communicate reasoning using words and /or numbers, evaluate an answer, or demonstrate the process used to determine an answer.

There are several short constructed-response items in CSAP, each taking approximately 3 to 5 minutes to complete. Each short constructed-response item receives a single score of 0, 1,or 2 points.

2 Points

The response accomplishes the prompted purpose and effectively communicates the student's mathematical understanding. The student's strategy and execution meet the content (including concepts, technique, representations, and connections), thinking processes, and qualitative demands of the task. Minor omissions may exist, but do not detract from the correctness of the response.

1 Point

The response partially accomplishes the prompted purpose. The student's strategy and execution lack adequate evidence of the learning and strategic tools that are needed to accomplish the task. The response may show some effort to accomplish the task, but with little success. It is clear that the student requires additional feedback and/or instruction from the teacher in order to accomplish the task.

0 Points

The response lacks evidence of mathematical knowledge that is appropriate to the intent of the task.

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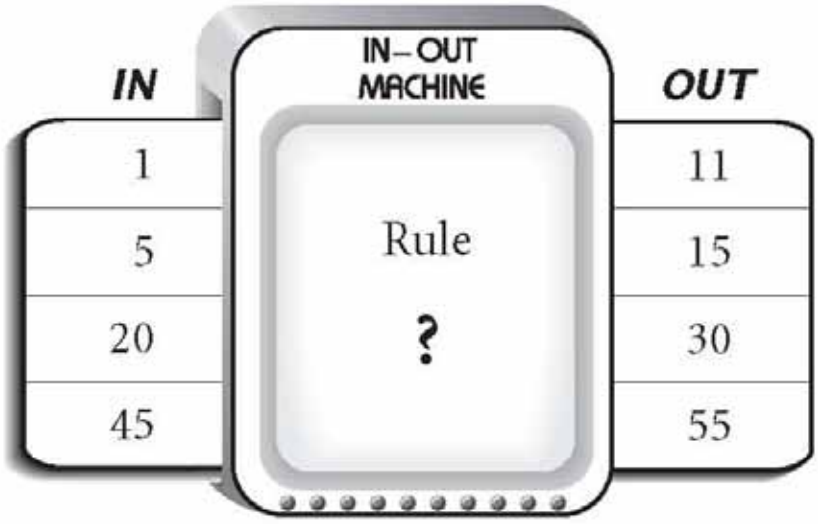
CSAP
Mathematics

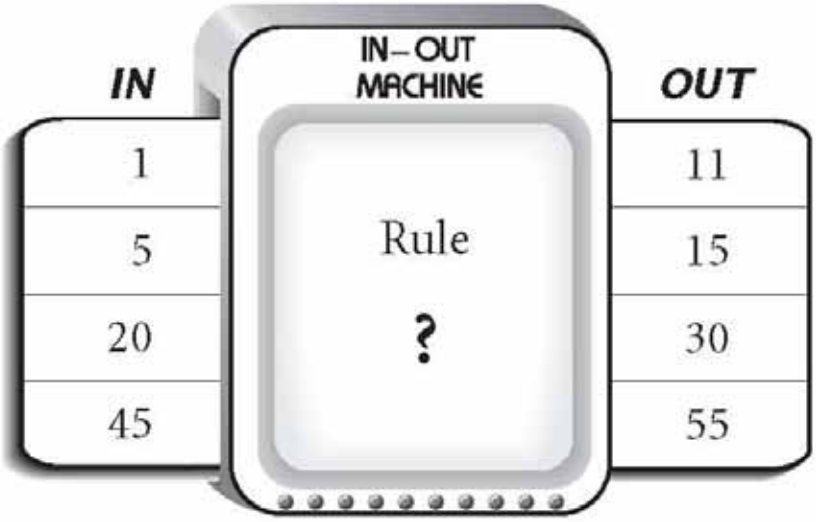
19 Study the In-Out machine below.



What rule is used for the In-Out machine?

- O double the number
- O add 10
- O add 15
- O subtract 10

19 Study the In-Out machine below.



What rule is used for the In-Out machine?

- O double the number
- ● add 10
- O add 15
- O subtract 10

Score Points: 1 point item (multiple choice)

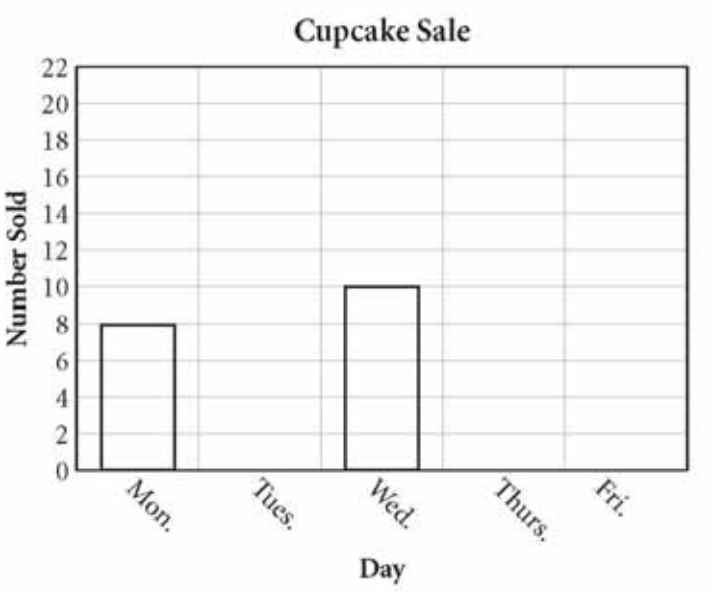
This item appeared at two adjacent grade levels (3 and 4).

Grade 3
Assessment Objective: 2.3a Patterns, Functions and Algebra
Subcontent Area: not classified

Grade 4
Assessment Objective: 2.3a Patterns, Functions and Algebra
Subcontent Area: not classified

CSAP
Mathematics

14 The bar graph below shows the number of cupcakes Josh sold on Monday and Wednesday.



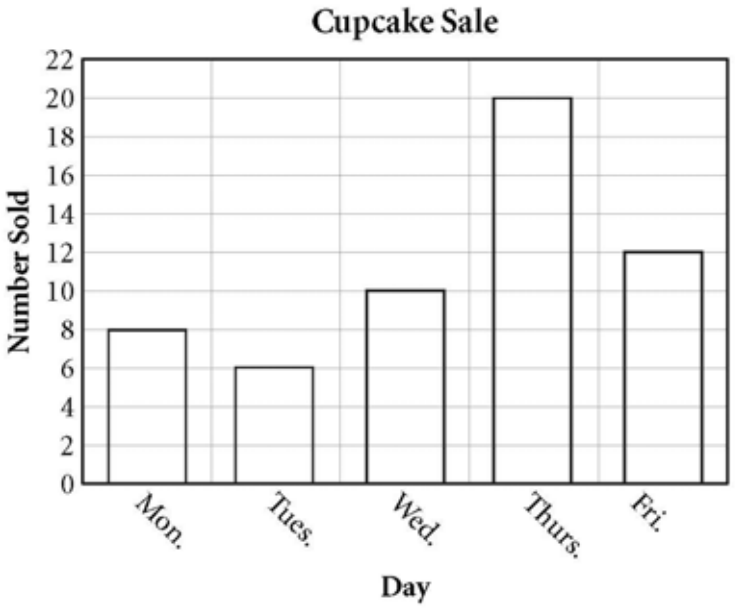
Use the information below to find the number of cupcakes Josh sold.

- On Tuesday, Josh sold 2 fewer cupcakes than on Monday.
- On Thursday, Josh sold twice as many cupcakes as on Wednesday.
- On Friday, Josh sold 4 more cupcakes than on Monday.

On the graph, draw the bars for Tuesday, Thursday, and Friday.

SESSION 1 – Item 14

Exemplary Response



Score Points: Apply 2-point holistic rubric

This item appeared at two adjacent grade levels (3 and 4).

Grade 3
Assessment Objective: 3.1a Data, Probability and Statistics
Subcontent Area: not classified

Grade 4
Assessment Objective: 3.1a Data, Probability and Statistics
Subcontent Area: not classified

Scoring Issues Resolution (SIR)
Guide for Scorers

Math Grade 3	**Item # 14**	**Point Value 2**
Shared Grade (4)	Item # 15	

What is the specific content being measured by this item?

Assessment Objective 3.1a - Interpreting and creating bar graphs

If one thinks of dividing the papers into "Upper Tier Papers" and "Lower Tier Papers," what is the most important feature that would be present in upper tier papers but not in lower tier papers?

Students can make an accurate interpretation of a bar graph and represent results on the same scale most of the time.

For this item, characterize the requirements for each of the possible score levels:

0 point paper –
Response has none of the requested bars drawn correctly.

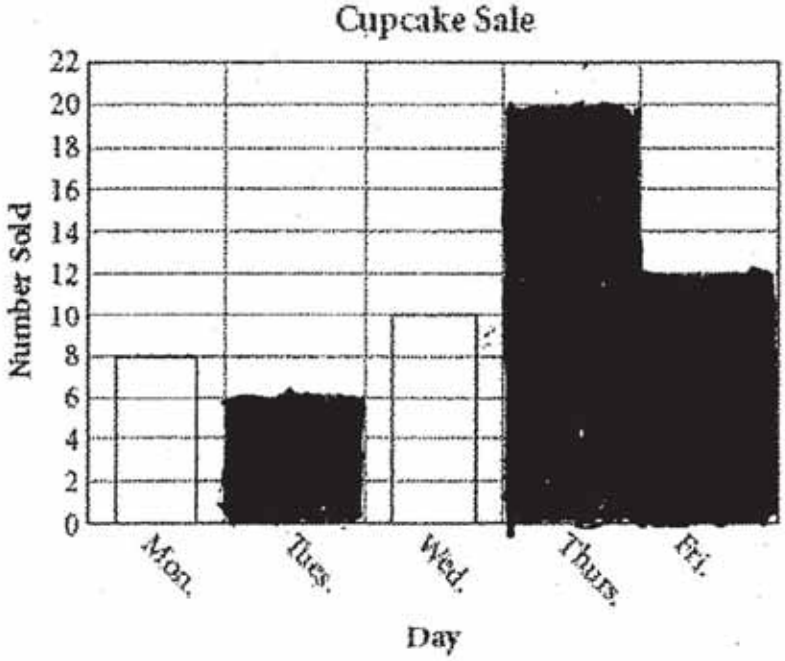
1 point paper –
Response has at least one of the bars clearly correctly drawn.

2 point paper –
Response has all three bars are correctly drawn.

In light of the student work considered on this item, what instructional information could you share with teachers?

- ✓ Be sure to pay attention to the measurements on a scale.
- ✓ Be sure students understand the meaning of “twice as many.”
- ✓ Advise students to carefully draw the graph lines so it is clear what number they represent.

14 The bar graph below shows the number of cupcakes Josh sold on Monday and Wednesday.



Use the information below to find the number of cupcakes Josh sold on Tuesday, Thursday, and Friday.

- On Tuesday, Josh sold 2 fewer cupcakes than on Monday.
- On Thursday, Josh sold twice as many cupcakes as on Wednesday.
- On Friday, Josh sold 4 more cupcakes than on Monday.

On the graph, draw the bars for Tuesday, Thursday, and Friday.

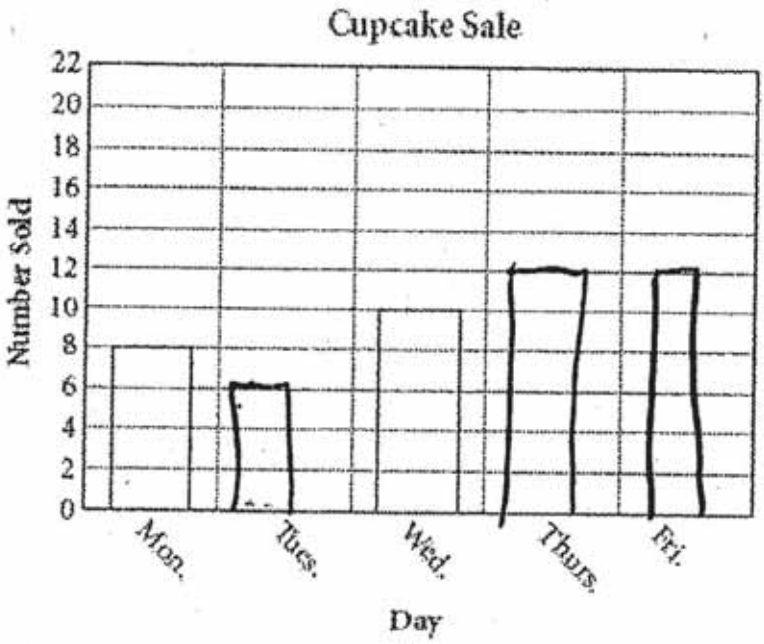
CSAP Math 2005
Grade 3 – Item 14 Shared at Grade 4
Score: 2

The response accomplishes the task and effectively communicates the student's mathematical understanding.

All three bars are drawn to the correct value.

2 Point Anchor

14 The bar graph below shows the number of cupcakes Josh sold on Monday and Wednesday.



Use the information below to find the number of cupcakes Josh sold on Tuesday, Thursday, and Friday.

- On Tuesday, Josh sold 2 fewer cupcakes than on Monday.
- On Thursday, Josh sold twice as many cupcakes as on Wednesday.
- On Friday, Josh sold 4 more cupcakes than on Monday.

On the graph, draw the bars for Tuesday, Thursday, and Friday.

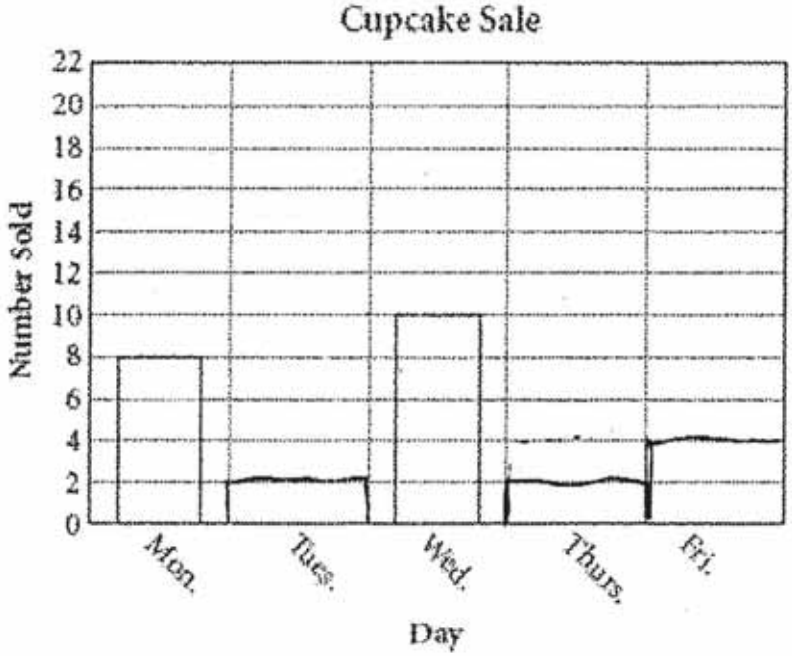
CSAP Math 2005
Grade 3 – Item 14 Shared at Grade 4
Score: 1

The response partially accomplishes the prompted purpose.

Two of the bars go to the correct value, but the third does not.

1 Point Anchor

14 The bar graph below shows the number of cupcakes Josh sold on Monday and Wednesday.



Use the information below to find the number of cupcakes Josh sold on Tuesday, Thursday, and Friday.

- On Tuesday, Josh sold 2 fewer cupcakes than on Monday.
- On Thursday, Josh sold twice as many cupcakes as on Wednesday.
- On Friday, Josh sold 4 more cupcakes than on Monday.

On the graph, draw the bars for Tuesday, Thursday, and Friday.

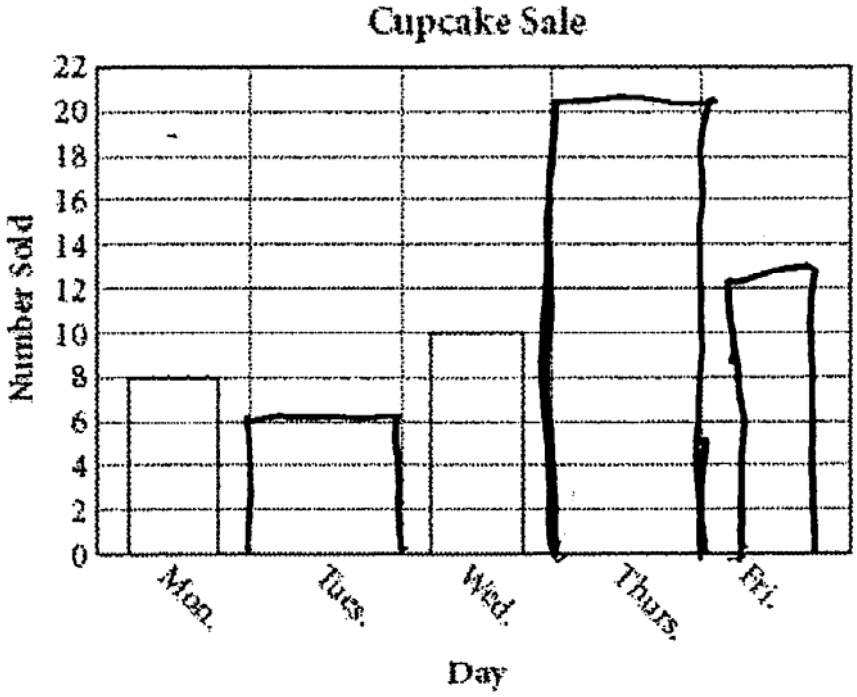
CSAP Math 2005
Grade 3 – Item 14 Shared at Grade 4
Score: 0

The response lacks evidence of mathematical knowledge that is appropriate to the intent of the task.

All three bars are drawn to the wrong values.

0 Point Anchor

14 The bar graph below shows the number of cupcakes Josh sold on Monday and Wednesday.



Use the information below to find the number of cupcakes Josh sold on Tuesday, Thursday, and Friday.

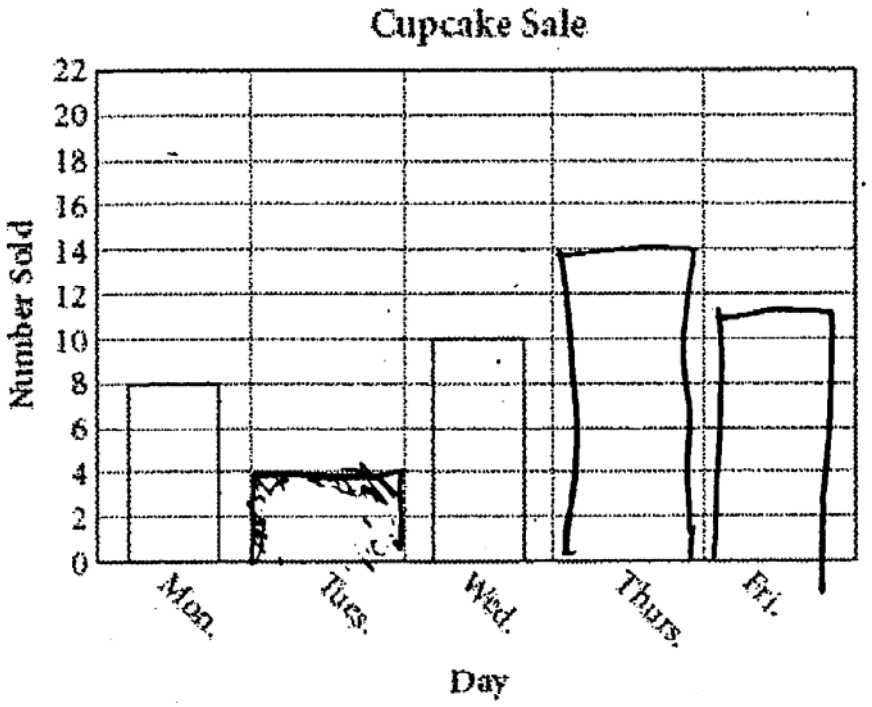
- On Tuesday, Josh sold 2 fewer cupcakes than on Monday.
- On Thursday, Josh sold twice as many cupcakes as on Wednesday.
- On Friday, Josh sold 4 more cupcakes than on Monday.

On the graph, draw the bars for Tuesday, Thursday, and Friday.

Score:	Scoring Rationale:

Discussion Paper #1

14 The bar graph below shows the number of cupcakes Josh sold on Monday and Wednesday.



Use the information below to find the number of cupcakes Josh sold on Tuesday, Thursday, and Friday.

- On Tuesday, Josh sold 2 fewer cupcakes than on Monday.
- On Thursday, Josh sold twice as many cupcakes as on Wednesday.
- On Friday, Josh sold 4 more cupcakes than on Monday.

On the graph, draw the bars for Tuesday, Thursday, and Friday.

Score:	Scoring Rationale:

Discussion Paper #2

2005 Mathematics Released Item
Discussion Paper Annotations

Grade	Item #	Response ID	Score Given	Annotations
3/4	**14**	**#1**	2	The student has drawn the bars very close to the correct values. The small difference is considered a minor omission.
3/4	**14**	**#2**	0	The student has drawn two of the bars to precise, but incorrect values. The third clearly is drawn below the correct line leaving no evidence of an interpretation that leads to a correct value.

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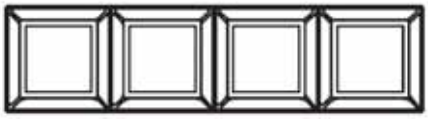
CSAP Mathematics

24 The candy bar shown below is divided into 4 equal parts.

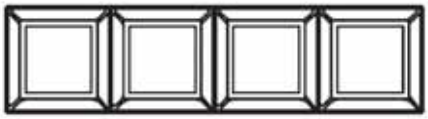
Part A Shade 1 part of the candy bar.



On the line below, write a fraction to show the amount of candy bar that you did **not** shade.

fraction _____

Part B Shade $\frac{2}{4}$ of the candy bar shown below.



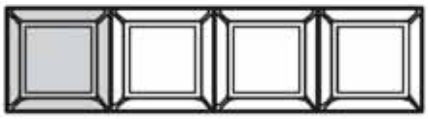
On the line below, write a fraction to show the amount of the candy bar that you did **not** shade.

fraction _____

Session 2 – Item 24

Exemplary Responses

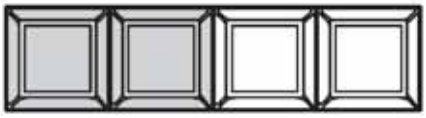
Part A

- 
- fraction $\frac{3}{4}$

OR

- Other valid response

Part B

- 
- fraction $\frac{2}{4}$

OR

- fraction $\frac{1}{2}$

OR

- Other valid response

Score Points: Apply 2-point holistic rubric
This item appeared at two adjacent grade levels (3 and 4).

Grade 3
Assessment Objective: 6.2a Operations and Calculations
Subcontent Area: not classified

Grade 4
Assessment Objective: 6.2a Operations and Calculations
Subcontent Area: not classified

Scoring Issues Resolution (SIR)
Guide for Scorers

Math Grade 3	**Item # 24**	**Point Value 2**
Shared Grade 4	Item # 27	

What is the specific content being measured by this item?

Assessment Objective 6.2a – Connecting visual representations of a fraction with an equivalent symbolic representation.

If one thinks of dividing the papers into "Upper Tier Papers" and "Lower Tier Papers", what is the most important feature that would be present in upper tier papers but not in lower tier papers?

Students show evidence that they can connect these two representations.

For this item, characterize the requirements for each of the possible score levels.

0 point paper –

Response has no indication that student can correctly connect equivalent visual and symbolic fractional representations.

1 point paper –

Response shows some evidence that the above connections can be made, but has not completed all correctly.

2 point paper –

Response must have both visual and symbolic representations correct for both parts.

In light of the student work considered on this item, what instructional information could you share with teachers?

Teach students to read an item carefully and pay particular attention to the word "**not"** when found in a description.

24 The candy bar shown below is divided into 4 equal parts.

Part A Shade 1 part of the candy bar.

On the line below, write a fraction to show the amount of the candy bar that you did **not** shade.

fraction $\frac{3}{4}$

Part B Shade $\frac{2}{4}$ of the candy bar shown below.

On the line below, write a fraction to show the amount of the candy bar that you did **not** shade.

fraction $\frac{1}{2}$

CSAP Math 2005
Grade 3 – Item 24 Shared at Grade 4
Score: 2

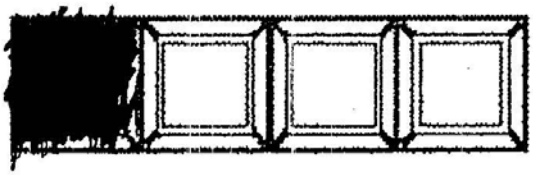
The response accomplishes the task and effectively communicates the student's mathematical understanding.

Both bars were correctly shaded and the correct symbolic representations were given.

2 Point Anchor

24 The candy bar shown below is divided into 4 equal parts.

Part A Shade 1 part of the candy bar.



On the line below, write a fraction to show the amount of the candy bar that you did not shade.

fraction 1/4

Part B Shade $\frac{2}{4}$ of the candy bar shown below.

On the line below, write a fraction to show the amount of the candy bar that you did not shade.

fraction 2/4

CSAP Math 2005
Grade 3 – Item 24 Shared at Grade 4
Score: 1

The response demonstrates some evidence of mathematical knowledge that is appropriate to the intent of the task.

Both parts are shaded correctly, but the fraction requested in Part A does not match what is requested by the item.

1 Point Anchor

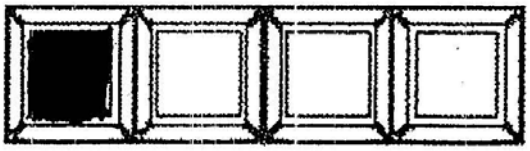
24 The candy bar shown below is divided into 4 equal parts.

Part A Shade 1 part of the candy bar.

On the line below, write a fraction to show the amount of the candy bar that you did not shade.

fraction $\frac{1}{4}$

Part B Shade $\frac{2}{4}$ of the candy bar shown below.



On the line below, write a fraction to show the amount of the candy bar that you did not shade.

fraction $\frac{1}{3}$

CSAP Math 2005
Grade 3 – Item 24 Shared at Grade 4
Score: 0

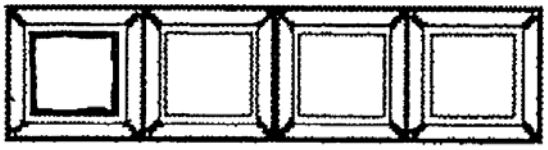
The response lacks evidence of mathematical knowledge that is appropriate to the intent of the task.

In both parts, the fraction given does not match the fractional part shaded.

0 Point Anchor

24 The candy bar shown below is divided into 4 equal parts.

Part A Shade 1 part of the candy bar.



On the line below, write a fraction to show the amount of the candy bar that you did **not** shade.

fraction $\frac{3}{4}$

Part B Shade $\frac{2}{4}$ of the candy bar shown below.

On the line below, write a fraction to show the amount of the candy bar that you did **not** shade.

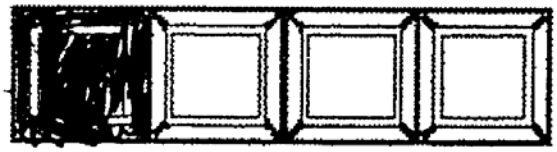
fraction $\frac{2}{4}$

Score:	Scoring Rationale:

Discussion Paper #1

24 The candy bar shown below is divided into 4 equal parts.

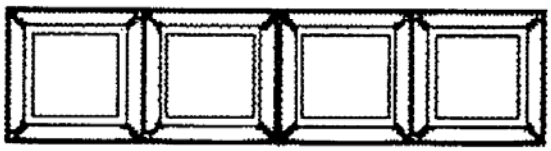
Part A Shade 1 part of the candy bar.



On the line below, write a fraction to show the amount of the candy bar that you did **not** shade.

fraction 3/4

Part B Shade $\frac{2}{4}$ of the candy bar shown below.



On the line below, write a fraction to show the amount of the candy bar that you did **not** shade.

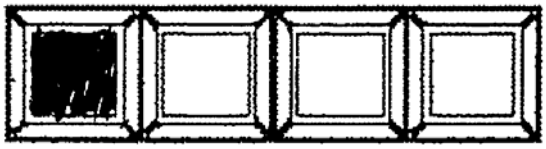
fraction 2/4

Score:	Scoring Rationale:

Discussion Paper #2

24 The candy bar shown below is divided into 4 equal parts.

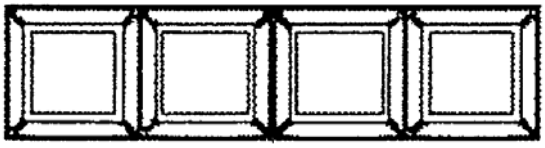
Part A Shade 1 part of the candy bar.



On the line below, write a fraction to show the amount of the candy bar that you did **not** shade.

fraction $\frac{1}{4}$

Part B Shade $\frac{2}{4}$ of the candy bar shown below.



On the line below, write a fraction to show the amount of the candy bar that you did **not** shade.

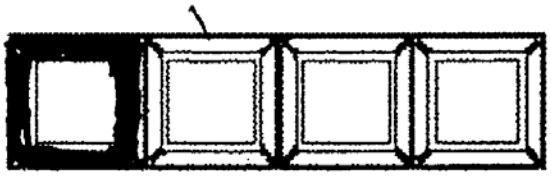
fraction $\frac{2}{4}$

Score:	Scoring Rationale:

Discussion Paper #3

24 The candy bar shown below is divided into 4 equal parts.

Part A Shade 1 part of the candy bar.



On the line below, write a fraction to show the amount of the candy bar that you did **not** shade.

fraction 3/4

Part B Shade $\frac{2}{4}$ of the candy bar shown below.

On the line below, write a fraction to show the amount of the candy bar that you did **not** shade.

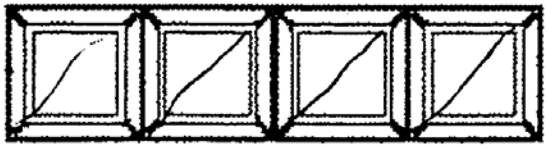
fraction 2/4

Score:	Scoring Rationale:

Discussion Paper #4

24 The candy bar shown below is divided into 4 equal parts.

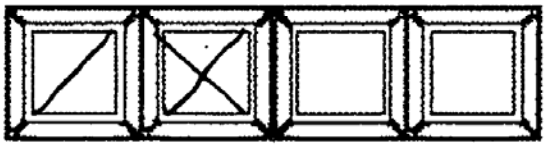
Part A Shade 1 part of the candy bar.



On the line below, write a fraction to show the amount of the candy bar that you did **not** shade.

fraction 3

Part B Shade $\frac{2}{4}$ of the candy bar shown below.



On the line below, write a fraction to show the amount of the candy bar that you did **not** shade.

fraction 6

Score:	Scoring Rationale:

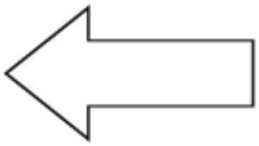
Discussion Paper #5

2005 Mathematics Released Item
Discussion Paper Annotations

Grade	Item #	Response ID	Score Given	Annotations
3	**24**	**#1**	2	The student has shaded the correct number of parts in each candy bar. They have not totally shaded in the parts, but enough has been shaded to make the student's intent clear. The corresponding fractions are correct.
3	**24**	**#2**	0	The student has only one of the shadings done correctly, but neither fraction matches the shading or the value requested.
3	**24**	**#3**	1	The student has shaded the first part correctly, but the fraction requested in does not match what is requested by the item. The second part shows no shading, but the fraction correctly matches the item request.
3	**24**	**#4**	1	The shading is correct in each part, meaning the student has correctly connected the given fraction with the visual. The student has not correctly written either fraction.
3	**24**	**#5**	0	The shading between the two parts is inconsistent. Since none of the requested numbers given are fractions as well, it is assumed the student does not understand the visual representation - fraction connection.

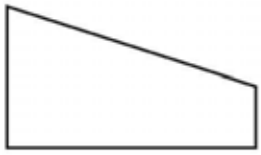
CSAP Mathematics

25 Which figure has **no** line of symmetry?

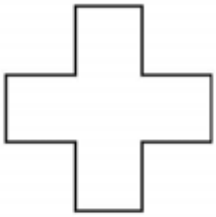


○

○

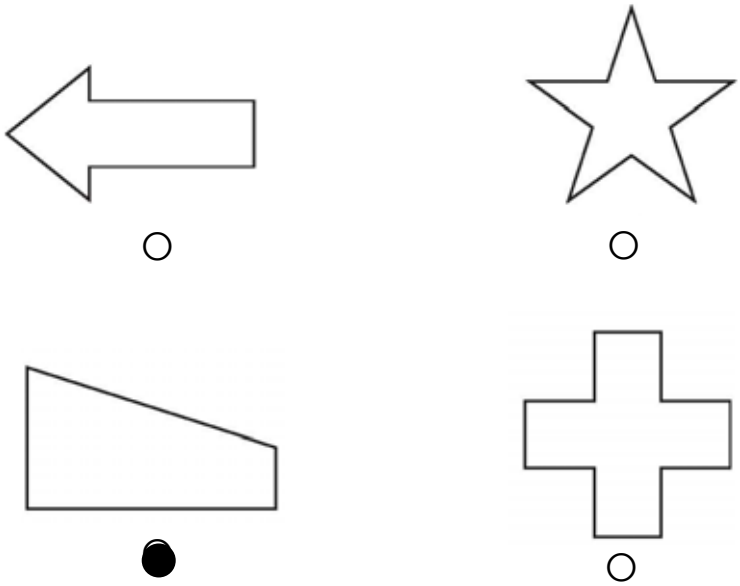


○



○

25 Which figure has **no** line of symmetry?



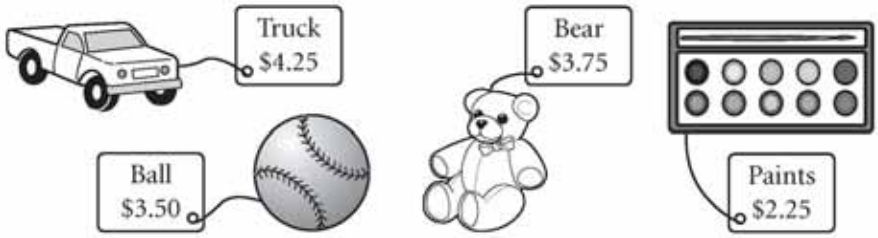
Score Points: 1 point item (multiple choice)

This item appeared at only one grade level.

Grade 3
Assessment Objective: 4.1b Geometry and Spatial Sense
Subcontent Area: not classified

CSAP Mathematics

40 Study the prices of the 4 toys shown below.



Part A Which three prices total $10.00? In the space below, show your work.

Part B What is the total price of all 4 toys? In the space below, show your work and write your answer on the line.

$ _____

Session 2 – Item 40

Exemplary Response

Part A

- $3.50, $4.25, and $2.25

  AND

- $3.50, $4.25, and $2.25 = $10.00

  OR

- Other Valid Response

Part B

- $13.75

  AND

- $3.75 + $10.00 = $13.75

  OR

- $3.50 + $4.25 + $2.25 + $3.75 = $13.75

  OR

- Other Valid Response

Score Points: Apply 3-point holistic rubric.

This item appeared at only one grade level.

Grade 3
Assessment Objective 6.2b: Operations and Calculations
Subcontent Area: not classified

Scoring Issues Resolution (SIR)
Guide for Scorers

Math Grade 3 Item # 40 Point Value 3

What is the specific content being measured by this item?

Assessment Objective 6.2b - Using money notation to add decimal values.

If one thinks of dividing the papers into "Upper Tier Papers" and "Lower Tier Papers," what is the most important feature that would be present in upper tier papers but not in lower tier papers?

Students show two correct values (selections) or have one correct value with enough work that shows evidence the student understands how to add money values.

For this item, characterize the requirements for each of the possible score levels:

0 point paper –

Response has no evidence that the student can successfully add money values.

1 point paper –

Response shows that the student at least has some knowledge of how to add money values although it may be incomplete and lead to an incorrect solution.

2 point paper –

Response shows the student understands how to complete the task but has either erred in one of the tasks or not shown any work to confirm his/her knowledge related to the task.

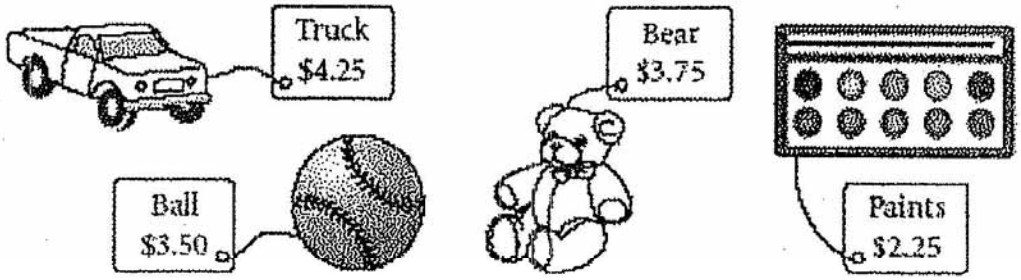
3 point paper –

Response shows two correct solutions and enough work to confirm the student's knowledge related to the task.

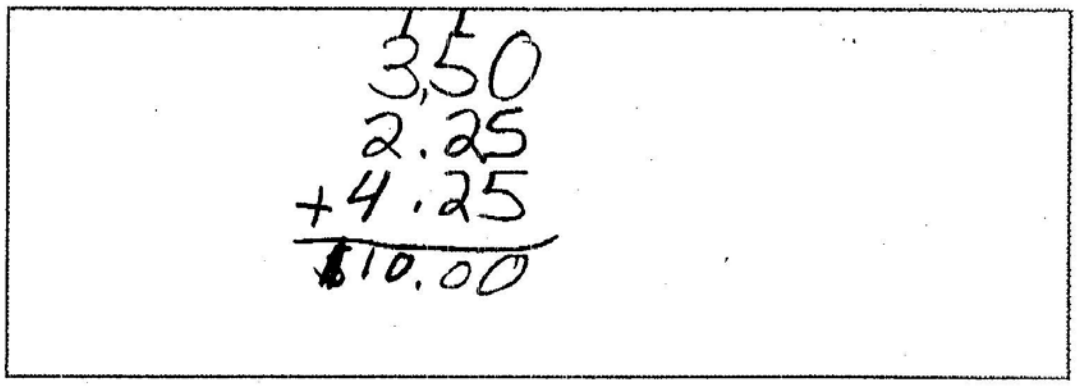
In light of the student work considered on this item, what instructional information could you share with teachers?

- ✓ Teach students to show their work and to check their work.
- ✓ Help students to clearly read and understand tasks.
- ✓ Students need to understand how to add with regrouping.

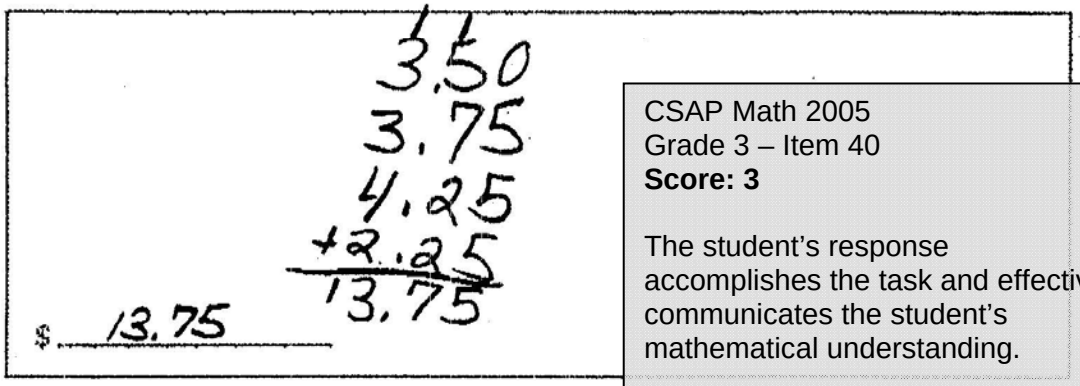
40 Study the prices of the 4 toys shown below.



Part A Which 3 prices total $10.00? In the space below, show your work.



Part B What is the total price of all 4 toys? In the space below, show your work and write your answer on the line.



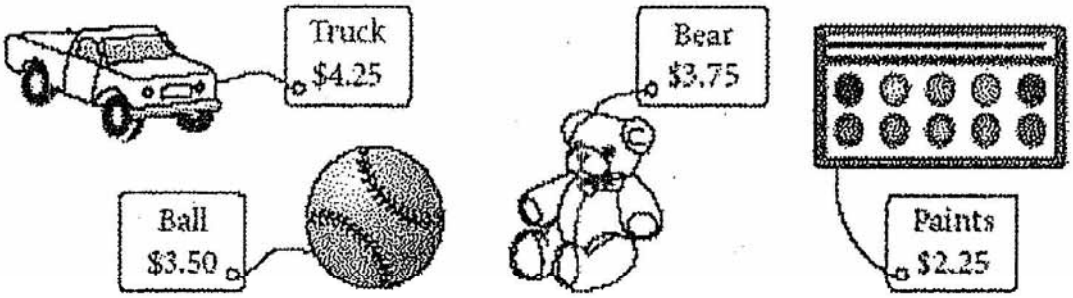
CSAP Math 2005
Grade 3 – Item 40
Score: 3

The student's response accomplishes the task and effectively communicates the student's mathematical understanding.

The student has the correct answer for each part and has shown enough work to confirm the student's knowledge related to the task.

3 Point Anchor

40 Study the prices of the 4 toys shown below.



Part A Which 3 prices total $10.00? In the space below, show your work.

Paints, Ball, and truck

Part B What is the total price of all 4 toys? In the space below, show your work and write your answer on the line.

$ 13.75

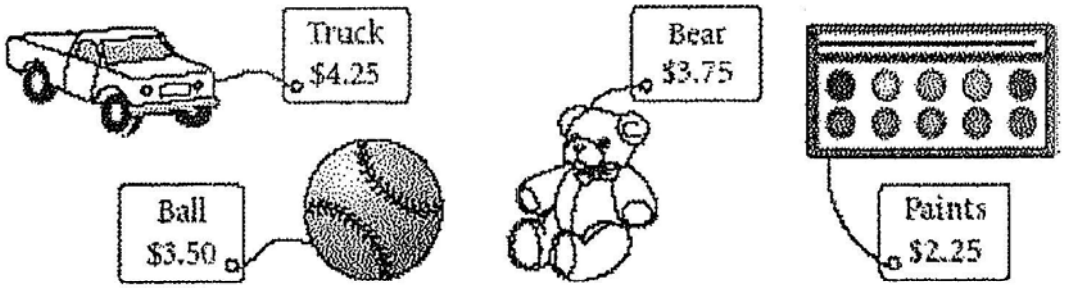
CSAP Math 2005
Grade 3 – Item 40
Score: 2

The response provides adequate evidence of the learning necessary to complete the prompted task.

The student has the correct answer for each part, but has not shown enough work to confirm the student's knowledge related to the task.

2 Point Anchor

40 Study the prices of the 4 toys shown below.



Part A Which 3 prices total $10.00? In the space below, show your work.

4.25 Truck
+ 2.25 Paints
3.50 Ball
10.00

Part B What is the total price of all 4 toys? In the space below, show your work and write your answer on the line.

4.25
2.25
3.50
10.00

$ 10.00

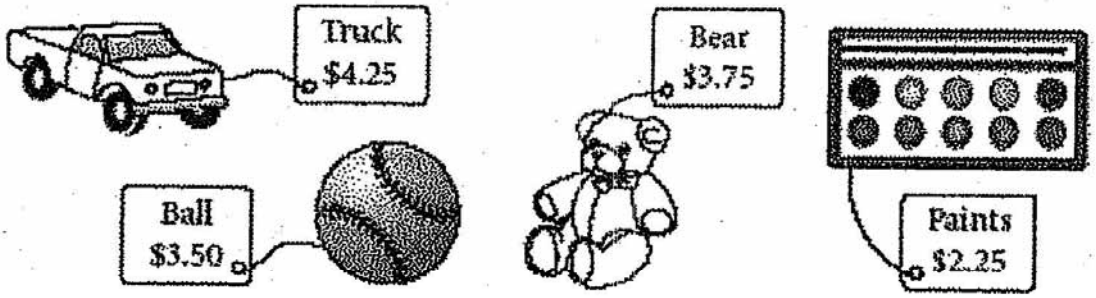
CSAP Math 2005
Grade 3 – Item 40
Score: 1

The response demonstrates some evidence of mathematical knowledge that is appropriate to the intent of the task.

Part A shows a correct answer with adequate work. Part B is a repeat of Part A and adds no new information about the student's knowledge related to the task.

1 Point Anchor

40 Study the prices of the 4 toys shown below.



Part A Which 3 prices total $10.00? In the space below, show your work.

Bear, truck, and ball

4+3+3=10

Part B What is the total price of all 4 toys? In the space below, show your work and write your answer on the line.

3+3=6

4+6=10

10+2=12

$ 12

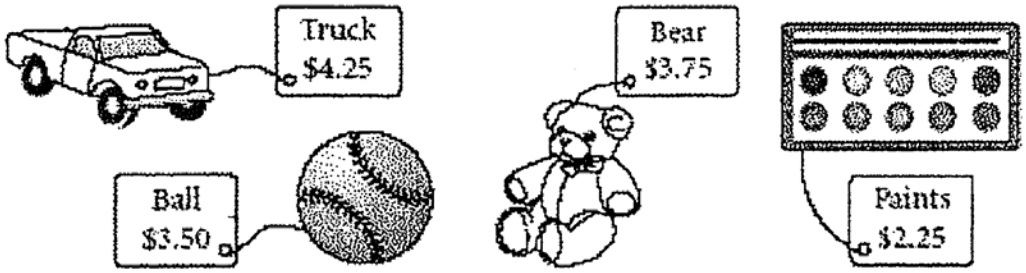
CSAP Math 2005
Grade 3 – Item 40
Score: 0

The response lacks evidence of mathematical knowledge that is appropriate to the intent of the task.

The student uses only the whole number portion of each price and gives no indication of knowledge of adding decimal values.

0 Point Anchor

40 Study the prices of the 4 toys shown below.



Part A Which 3 prices total $10.00? In the space below, show your work.

$4.25
$3.50
+ $2.25
$9.90

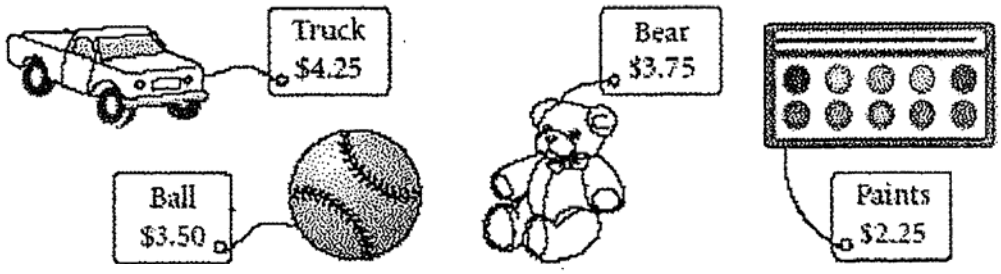
Part B What is the total price of all 4 toys? In the space below, show your work and write your answer on the line.

$4.25
$3.50
$2.25
$9.90

$ 9.90

Score:	Scoring Rationale:

40 Study the prices of the 4 toys shown below.



Part A Which 3 prices total $10.00? In the space below, show your work.

3.50
4.25
2.25
10.00

Ball Paint
$3.50 $2.25
truck
4.25

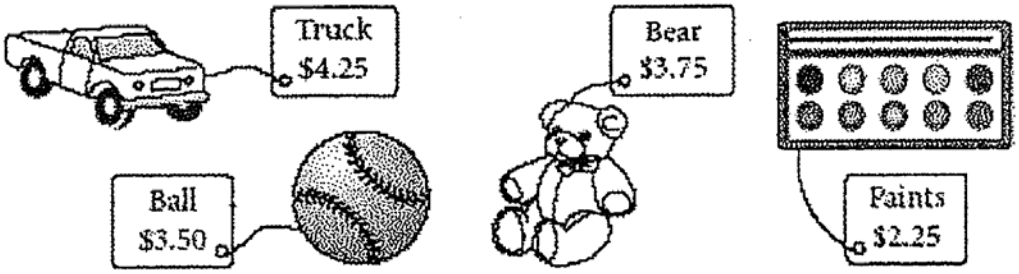
Part B What is the total price of all 4 toys? In the space below, show your work and write your answer on the line.

4.25
3.50
3.75
2.25
14.0

$ 14.0

Score:	Scoring Rationale:

40 Study the prices of the 4 toys shown below.



Part A Which 3 prices total $10.00? In the space below, show your work.

3.75 4.25 3.50

Part B What is the total price of all 4 toys? In the space below, show your work and write your answer on the line.

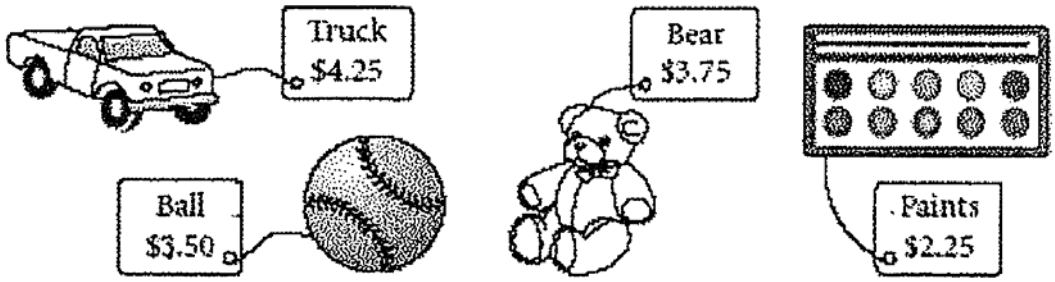
3.50 4.25 3.75 2.25

$ 14.25

Score:	Scoring Rationale:

Discussion Paper #3

40 Study the prices of the 4 toys shown below.



Part A Which 3 prices total $10.00? In the space below, show your work.

Truck Bear paints
4.25 + 3.75 = 8.00 + 2.25 =
10.00

Part B What is the total price of all 4 toys? In the space below, show your work and write your answer on the line.

$ 13.50

Score:	Scoring Rationale:

Discussion Paper #4

2005 Mathematics Released Item
Discussion Paper Annotations

Grade	Item #	Response ID	Score Given	Annotations
3	**40**	**#1**	1	The student picks the three correct items adding their prices to get an incorrect value. The work does show some knowledge related to the task. Part B adds no new information.
3	**40**	**#2**	2	The student completes Part A correctly, sets up Part B correctly but has a mistake in the addition.
3	**40**	**#3**	0	The student shows no evidence indicating why the numbers written in Part A were selected. Part B shows no connection between the values given in the problem and the student's solution.
3	**40**	**#4**	1	In Part A the student gives some evidence of knowledge of adding decimal values. The answer to Part B is incorrect and shows no process information.

CSAP
Mathematics

23 Mr. Burns has a jar with 178 jelly beans, as shown below.

Part A

Estimate the number of jelly beans that will be in the jar when it is half full. In the space below, show how you found your estimate and write your estimate on the line.

Estimate_____ jelly beans

Part B

Estimate the number of jelly beans that will be in the jar when it is filled to the top. In the space below, show how you found your estimate and write your estimate on the line.

Estimate_____ jelly beans

Part C

A small scoop holds 9 jelly beans.

Estimate the number of scoops that can be taken out of a **full** jar. In the space below, show how you found your estimate and write your estimate on the line.

Estimate_____ scoops

SESSION 1 – Item 23

Exemplary Response

Part A

- Estimate **400** jelly beans

AND

- The jar is about $\frac{1}{4}$ full with about 200 jelly beans, so half full is twice that amount, or 400.

OR

- Other valid explanation

Part B

- Estimate **800** jelly beans

AND

- If $\frac{1}{2}$ full is 400, then full to the top is 2 × 400 = 800

OR

- If $\frac{1}{4}$ full is 200, then full to the top is 4 × 200 = 800

OR

- Other valid response

Part C

- Estimate **80** scoops

AND

- A full jar contains about 800 jelly beans and one scoop holds about 10 jelly beans. So, 800 jelly beans ÷ 10 jelly beans per scoop = 80 scoops.

OR

- Other valid explanation

Score Points: Apply 4-point holistic rubric.
This item appeared at only one grade level.

Grade 4
Assessment Objective 1.5a: Number Sense
Subcontent Area: number and operations sense

Scoring Issues Resolution (SIR)
Guide for Scorers

Math Grade __4___ Item # __23___ Point Value __4___

What is the specific content being measured by this item?

Assessment Objective 1.5a - Using estimation strategies.

If one thinks of dividing the papers into "Upper Tier Papers" and "Lower Tier Papers," what is the most important feature that would be present in upper tier papers but not in lower tier papers?

Students with upper tier papers use estimation strategies to solve the problem instead of straight computation.

For this item, characterize the requirements for each of the possible score levels:

0 point paper –

Response has at most one reasonable value with that value not being consistent with the other two values. Response will often show only straight computation; however, it is either completed incorrectly or uses a non-appropriate operation.

1 point paper –

Response may show straight computation with only one or two of the parts correct. A paper that has only one part correct using estimation would also receive 1 point.

2 point paper –

Response may show straight computation, but all parts must be correct. Response may show a mix of straight computation and estimation with the estimate not being clearly reasonable.

3 point paper –

Response must show some reasonable estimation. Response may contain an estimation that is not very reasonable or some straight computation to find values.

4 point paper –

Response shows estimation to arrive at three reasonable estimated values.

Note: *Responses are considered "reasonable" if they are determined by rounding 178 to 170, 175, 180, or 200 and 9 to 10 in Part C.*

In light of the student work considered on this item, what instructional information could you share with teachers?

- ✓ Teach estimation strategies such as rounding, front end adding, and friendly numbers. An excellent way to do this is through "Number Talks"
- ✓ Students must realize that when asked to estimate, an exact answer is not considered correct
- ✓ It is critical for students to show their work and its connection to their answer.

23 Mr. Burns has a jar with 178 jelly beans, as shown below.

Part A Estimate the number of jelly beans that will be in the jar when it is half full. In the space below, show how you found your estimate and write your estimate on the line.

$$\begin{array}{r} {\scriptstyle 1} \\ 180 \\ +180 \\ \hline 360 \end{array}$$

Estimate 360 jelly beans

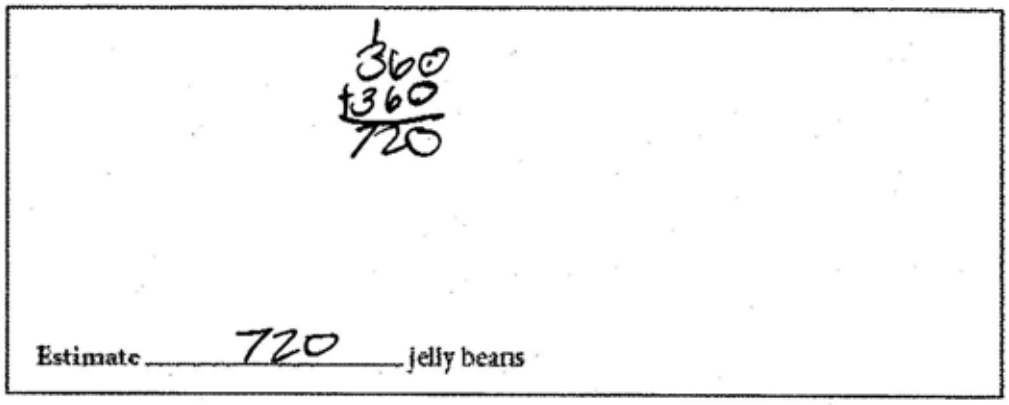
CSAP Math 2005
Grade 4 – Item 23
Score: 4

The response accomplishes the task and effectively communicates the student's mathematical understanding.

The student uses estimation in Part A to find the total number of jelly beans in a half full jar and then uses this estimation to complete Parts B and C.

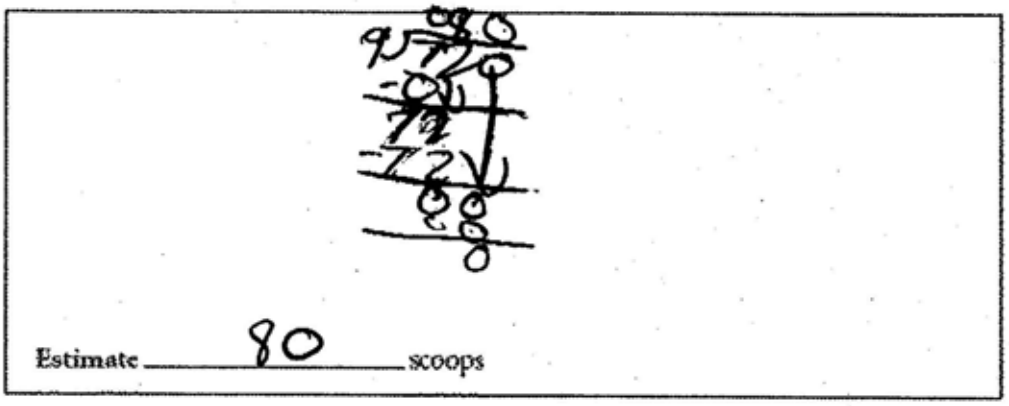
4 Point Anchor (a)

Part B Estimate the number of jelly beans that will be in the jar when it is filled to the top. In the space below, show how you found your estimate and write your estimate on the line.



Part C A small scoop holds 9 jelly beans.

Estimate the number of scoops that can be taken out of a full jar. In the space below, show how you found your estimate and write your estimate on the line.



4 Point Anchor (b)

23 Mr. Burns has a jar with 178 jelly beans, as shown below.

Part A **Estimate** the number of jelly beans that will be in the jar when it is half full. In the space below, show how you found your estimate and write your estimate on the line.

178 200
x2 x2
400

Estimate 400 jelly beans

CSAP Math 2005
Grade 4 – Item 23
Score: 3

The response accomplishes much of the task. The work in Part B does not match the correct answer given but this is viewed as an oversight.

Part C seems to lose track of what is being estimated although the estimation process is fine.

3 Point Anchor (a)

Part B Estimate the number of jelly beans that will be in the jar when it is filled to the top. In the space below, show how you found your estimate and write your estimate on the line.

400
X9
800

Estimate 800 jelly beans

Part C A small scoop holds 9 jelly beans.

Estimate the number of scoops that can be taken out of a full jar. In the space below, show how you found your estimate and write your estimate on the line.

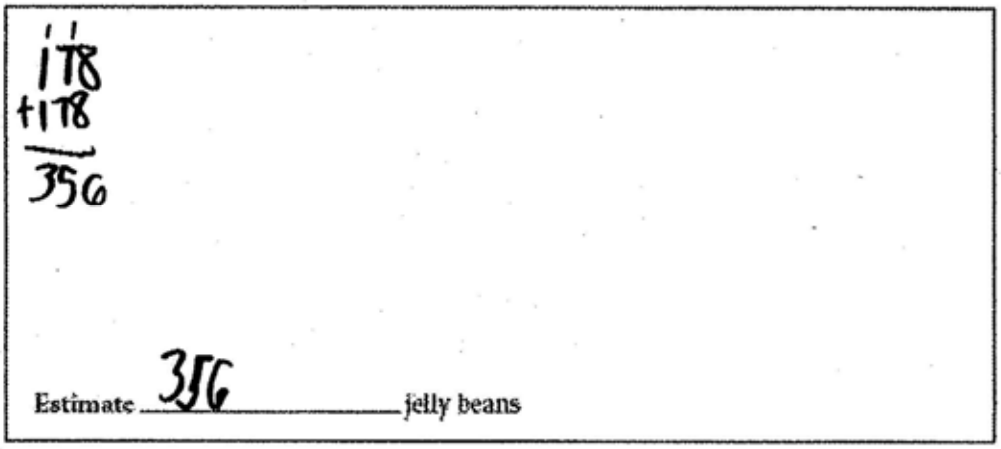
8890
X9
900

Estimate 900 scoops

3 Point Anchor (b)

23 Mr. Burns has a jar with 178 jelly beans, as shown below.

Part A Estimate the number of jelly beans that will be in the jar when it is half full. In the space below, show how you found your estimate and write your estimate on the line.



CSAP Math 2005
Grade 4 – Item 23
Score: 2

The response provides adequate evidence of the learning and strategic tools necessary to complete the prompted task.

The student knows how to attack this problem computationally, but has given know evidence of estimation skills.

2 Point Anchor (a)

Part B Estimate the number of jelly beans that will be in the jar when it is filled to the top. In the space below, show how you found your estimate and write your estimate on the line.

11
356
356
712

Estimate 712 jelly beans

Part C A small scoop holds 9 jelly beans.

Estimate the number of scoops that can be taken out of a full jar. In the space below, show how you found your estimate and write your estimate on the line.

79
9 | 712
63
82
9

Estimate 79 scoops

2 Point Anchor (b)

23 Mr. Burns has a jar with 178 jelly beans, as shown below.

Part A Estimate the number of jelly beans that will be in the jar when it is half full. In the space below, show how you found your estimate and write your estimate on the line.

Estimate 356 jelly beans

CSAP Math 2005
Grade 4 – Item 23
Score: 1

The response demonstrates some evidence of mathematical knowledge that is appropriate to the intent of the task.

The student completed Parts A and B correctly but with a complete absence of estimation. Part C the student chooses an operation that is inappropriate for the task.

1 Point Anchor (a)

Part B Estimate the number of jelly beans that will be in the jar when it is filled to the top. In the space below, show how you found your estimate and write your estimate on the line.

22
356
+178
+178
712

Estimate 712 jelly beans

Part C A small scoop holds 9 jelly beans.

Estimate the number of scoops that can be taken out of a full jar. In the space below, show how you found your estimate and write your estimate on the line.

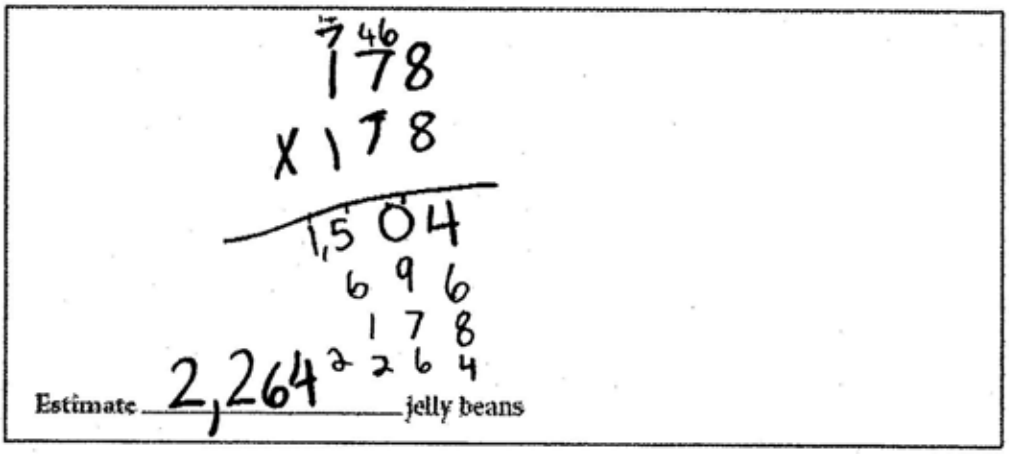
you subtact 9 from 712 andit equles 703

Estimate 709 scoops

1 Point Anchor (b)

23 Mr. Burns has a jar with 178 jelly beans, as shown below.

Part A Estimate the number of jelly beans that will be in the jar when it is half full. In the space below, show how you found your estimate and write your estimate on the line.

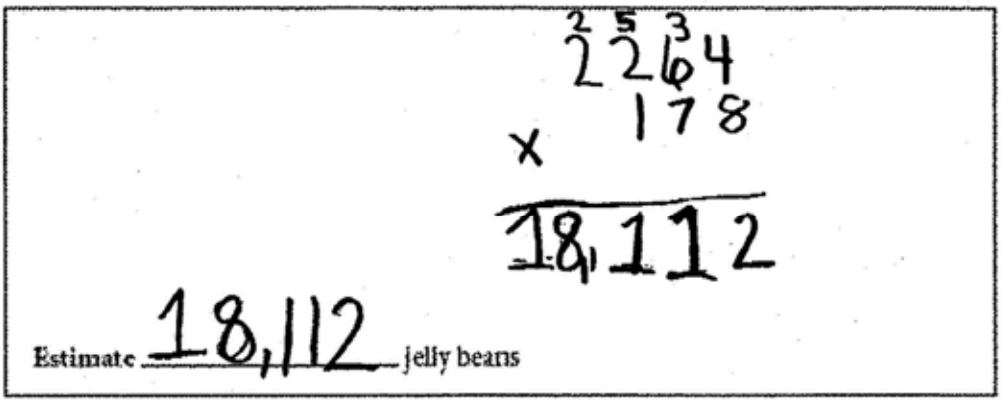


CSAP Math 2005
Grade 4 – Item 23
Score: 0

The response lacks evidence of mathematical knowledge that is appropriate to the intent of the task.

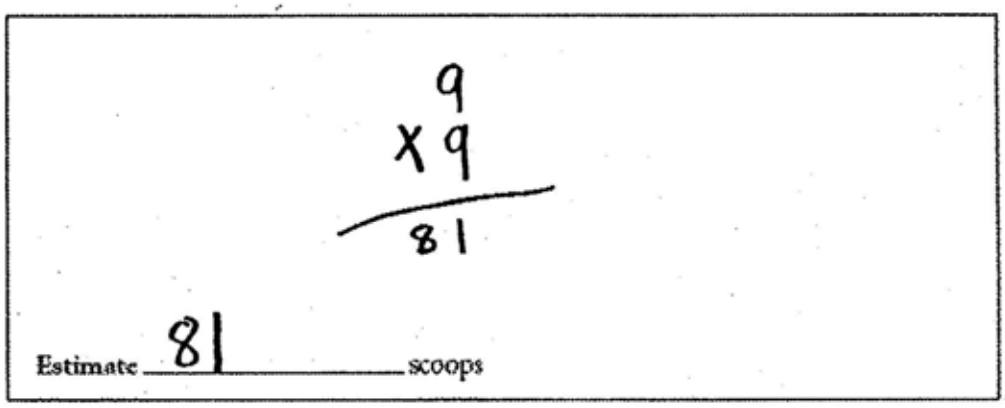
0 Point Anchor (a)

Part B Estimate the number of jelly beans that will be in the jar when it is filled to the top. In the space below, show how you found your estimate and write your estimate on the line.



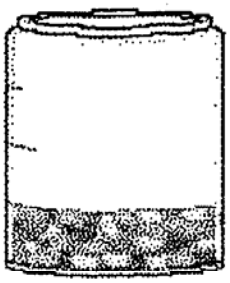
Part C A small scoop holds 9 jelly beans.

Estimate the number of scoops that can be taken out of a full jar. In the space below, show how you found your estimate and write your estimate on the line.

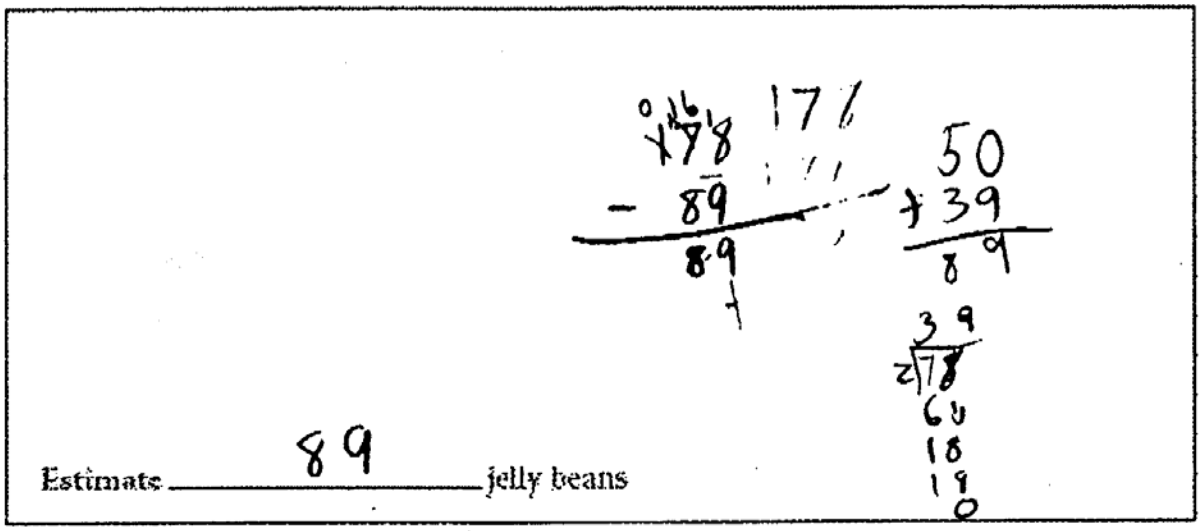


0 Point Anchor (b)

23 Mr. Burns has a jar with 178 jelly beans, as shown below.



Part A Estimate the number of jelly beans that will be in the jar when it is half full. In the space below, show how you found your estimate and write your estimate on the line.



Estimate 89 jelly beans

Score:	Scoring Rationale:

Discussion Paper #1 (a)

Part B Estimate the number of jelly beans that will be in the jar when it is filled to the top. In the space below, show how you found your estimate and write your estimate on the line.

33
178
+ 178
+ 178
+ 178
712

Estimate 712 jelly beans

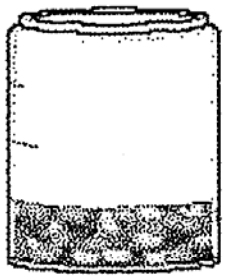
Part C A small scoop holds 9 jelly beans.

Estimate the number of scoops that can be taken out of a full jar. In the space below, show how you found your estimate and write your estimate on the line.

079
9 | 712
061
63
81

Estimate 79 scoops

23 Mr. Burns has a jar with 178 jelly beans, as shown below.



Part A Estimate the number of jelly beans that will be in the jar when it is half full. In the space below, show how you found your estimate and write your estimate on the line.

The jar is ½ full and has 178 jelly beans so I added 178 and 178 and I got 356.

Estimate 356 jelly beans

11
178
+178
356

Score:	Scoring Rationale:

Discussion Paper #2 (a)

Part B Estimate the number of jelly beans that will be in the jar when it is filled to the top. In the space below, show how you found your estimate and write your estimate on the line.

The jar is ¼ full and has 178 so I timesed 178 by 4 and I got 712.

33
178
x 4
712

Estimate 712 jelly beans

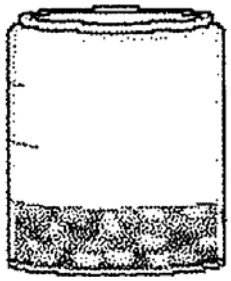
Part C A small scoop holds 9 jelly beans.

Estimate the number of scoops that can be taken out of a full jar. In the space below, show how you found your estimate and write your estimate on the line.

79 R2
10)712
-70
12
-10
2

Estimate 71 scoops

23 Mr. Burns has a jar with 178 jelly beans, as shown below.



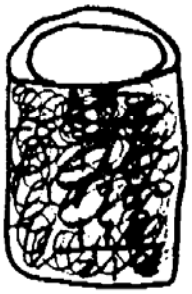
Part A Estimate the number of jelly beans that will be in the jar when it is half full. In the space below, show how you found your estimate and write your estimate on the line.

Estimate 356 jelly beans

Score:	Scoring Rationale:

Discussion Paper #3 (a)

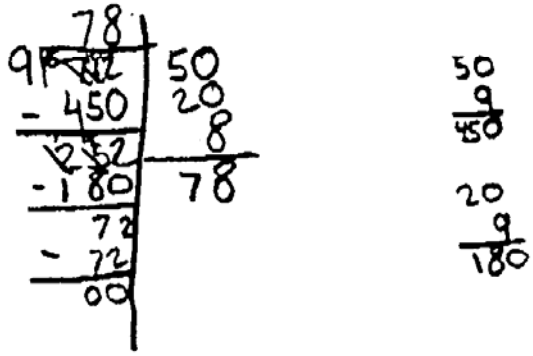
Part B Estimate the number of jelly beans that will be in the jar when it is filled to the top. In the space below, show how you found your estimate and write your estimate on the line.



Estimate 712 jelly beans

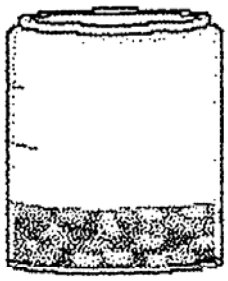
Part C A small scoop holds 9 jelly beans.

Estimate the number of scoops that can be taken out of a full jar. In the space below, show how you found your estimate and write your estimate on the line.



Estimate 78 scoops

23 Mr. Burns has a jar with 178 jelly beans, as shown below.



Part A Estimate the number of jelly beans that will be in the jar when it is half full. In the space below, show how you found your estimate and write your estimate on the line.

178 200
x2 x2
400

Estimate 460 jelly beans

Score:	Scoring Rationale:

Discussion Paper #4 (a)

Part B Estimate the number of jelly beans that will be in the jar when it is filled to the top. In the space below, show how you found your estimate and write your estimate on the line.

400
x4
800

Estimate 800 jelly beans

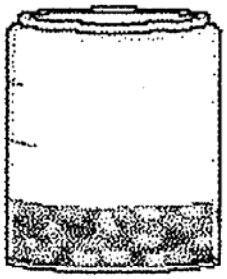
Part C A small scoop holds 9 jelly beans.

Estimate the number of scoops that can be taken out of a full jar. In the space below, show how you found your estimate and write your estimate on the line.

Estimate 900 scoops

Discussion Paper #4 (b)

23 Mr. Burns has a jar with 178 jelly beans, as shown below.



Part A Estimate the number of jelly beans that will be in the jar when it is half full. In the space below, show how you found your estimate and write your estimate on the line.

$$\begin{array}{r} {\scriptstyle 1} \\ 180 \\ +\ 180 \\ \hline 360 \end{array}$$

Estimate 360 jelly beans

Score:	Scoring Rationale:

Discussion Paper #5 (a)

Part B Estimate the number of jelly beans that will be in the jar when it is filled to the top. In the space below, show how you found your estimate and write your estimate on the line.

3
180
180
180
720

Estimate _____ jelly beans

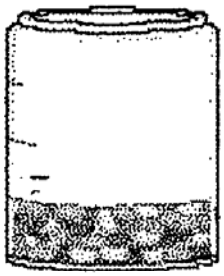
Part C A small scoop holds 9 jelly beans.

Estimate the number of scoops that can be taken out of a full jar. In the space below, show how you found your estimate and write your estimate on the line.

72
19|720
- 20

Estimate 52 scoops

23 Mr. Burns has a jar with 178 jelly beans, as shown below.



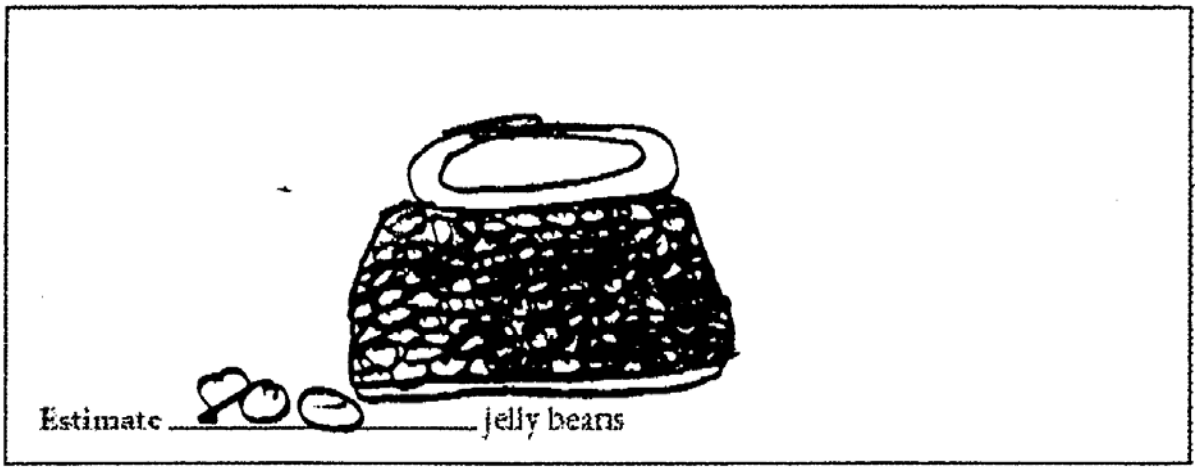
Part A Estimate the number of jelly beans that will be in the jar when it is half full. In the space below, show how you found your estimate and write your estimate on the line.

Estimate 497 jelly beans

Score:	Scoring Rationale:

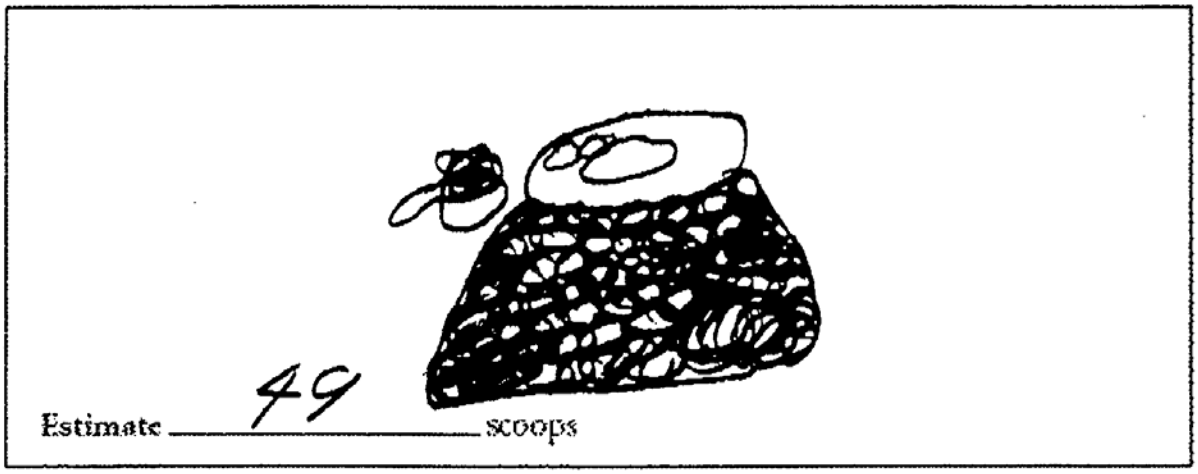
Discussion Paper #6 (a)

Part B Estimate the number of jelly beans that will be in the jar when it is filled to the top. In the space below, show how you found your estimate and write your estimate on the line.



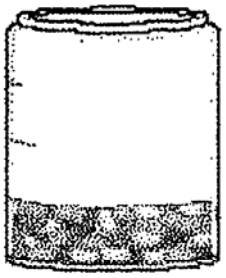
Part C A small scoop holds 9 jelly beans.

Estimate the number of scoops that can be taken out of a full jar. In the space below, show how you found your estimate and write your estimate on the line.



Discussion Paper #6 (b)

23 Mr. Burns has a jar with 178 jelly beans, as shown below.



Part A Estimate the number of jelly beans that will be in the jar when it is half full. In the space below, show how you found your estimate and write your estimate on the line.

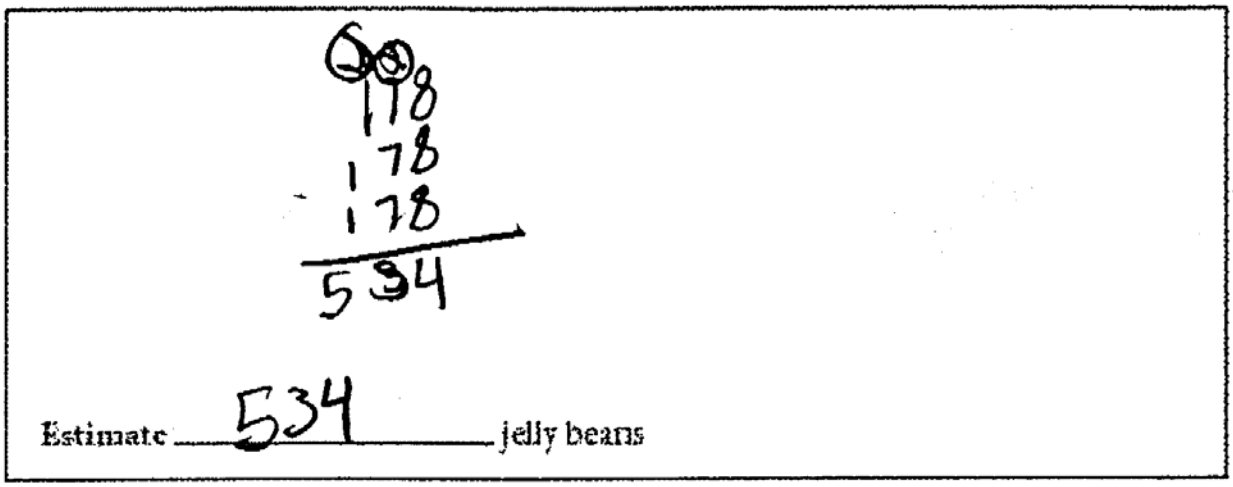
60
178
+178
356

Estimate 356 jelly beans

Score:	Scoring Rationale:

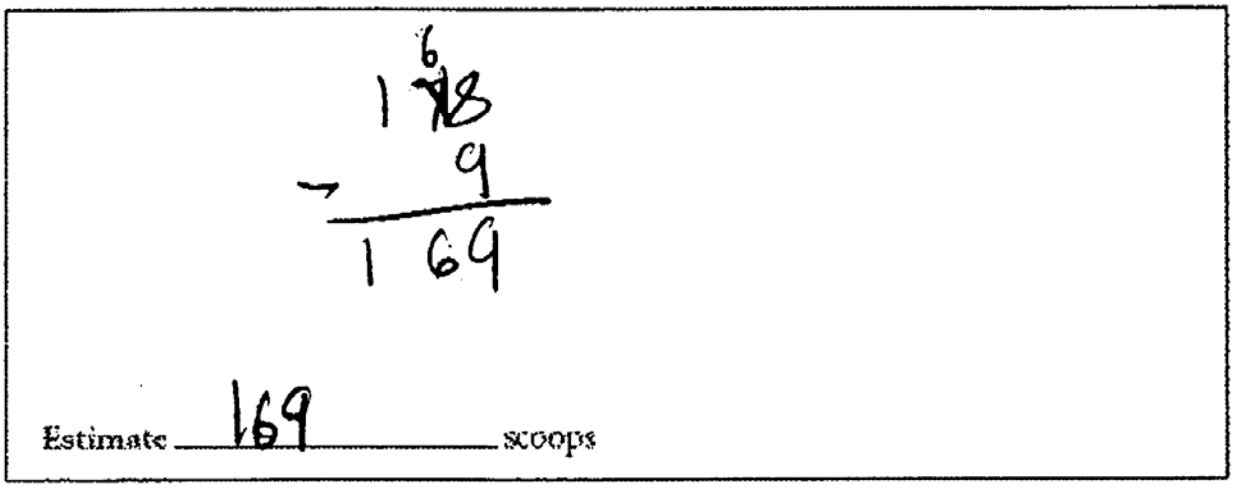
Discussion Paper #7 (a)

Part B Estimate the number of jelly beans that will be in the jar when it is filled to the top. In the space below, show how you found your estimate and write your estimate on the line.



Part C A small scoop holds 9 jelly beans.

Estimate the number of scoops that can be taken out of a full jar. In the space below, show how you found your estimate and write your estimate on the line.



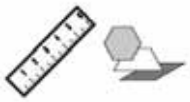
Discussion Paper #7 (b)

2005 Mathematics Released Item
Discussion Paper Annotations

Grade	Item #	Response ID	Score Given	Annotations
4	**23**	**#1**	1	Parts B & C show exact computational values not using any estimation. It is not at all clear what is being attempted in Part A and its answer is not consistent with the other parts.
4	**23**	**#2**	3	The response shows adequate evidence of the learning needed to accomplish the task. But evidence of estimation skills is missing in Parts A & B.
4	**23**	**#3**	2	No work shown in Parts A & B, but the answer are consistent with the use of exact computation. This is certainly the case with Part C. The student knows how to attack this problem computationally, but has given no evidence of estimation skills.
4	**23**	**#4**	3	The response uses estimation to obtain a reasonable value for both parts A & B. (The fact that 400 X 4 is given to lead to 800 is considered a minor omission). Part C begins correctly but loses track of what are the estimated value mean in the problem.
4	**23**	**#5**	3	Parts A and B present a sound approach using estimation to produce reasonable values. Part C shows the correct operation but does not clearly lead to the submitted value.
4	**23**	**#6**	0	This response shows no work that can confirm how the values were found. In addition the values are not consistent with each other.
4	**23**	**#7**	1	Part A shows a correct exact computation approach. Part B contains a conceptual error with doubling and part C uses an operation inappropriate to the task.

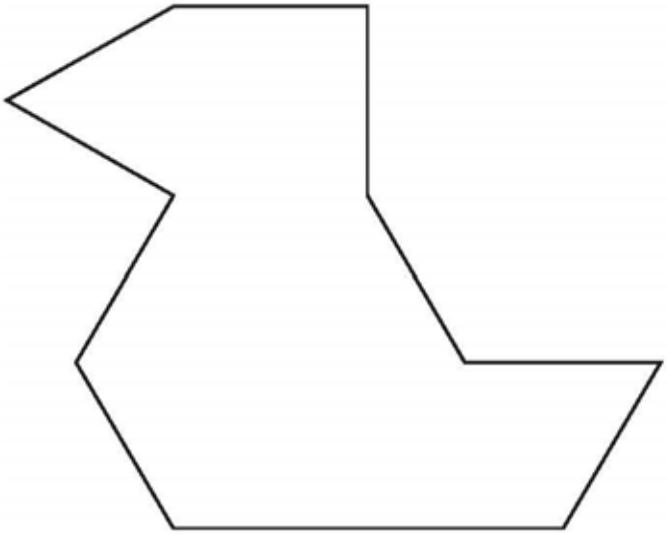
CSAP
Mathematics

31



From your punch-out tools, use the ruler and the pattern blocks to help you solve this problem.

Brent traced around pattern blocks to make the polygon below.



Part A What is the perimeter of Brent's polygon? On the line below, write your answer:

_____ inches

Part B Use the directions below to make another polygon.

- Use two pattern blocks.
- Use each pattern block only once.
- Make a polygon with a perimeter of **6 inches**.

In the space below, trace around the 2 pattern blocks to show the polygon.

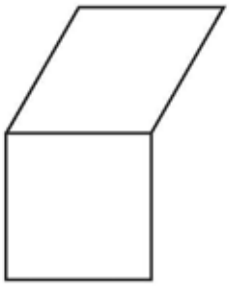
SESSION 1 – Item 23

Exemplary Response

Part A

- 11 inches

Part B

- 

OR

- Other polygon using 2 pattern blocks that measure 6 inches.

Score Points: Apply 3-point holistic rubric.

This item appeared at only one grade level.

Grade 4
Assessment Objective 5.3a: Measurement
Subcontent Area: measurement

Scoring Issues Resolution (SIR)
Guide for Scorers

Math Grade 4 Item # 31 Point Value 3

What is the specific content being measured by this item?

Assessment Objective 5.3a – Measuring and determining the perimeter of polygons.

If one thinks of dividing the papers into "Upper Tier Papers" and "Lower Tier Papers," what is the most important feature that would be present in upper tier papers but not in lower tier papers?

Students can use criteria to correctly measure and create a polygon with a given perimeter.

For this item, characterize the requirements for each of the possible score levels:

0 point paper –

Response has no parts that are correct with in the given range.

Note: *In Part A, 10 through 12 is the given range; in Part B 5 through 7 is the given range.*

1 point paper –

Response shows a correct value for only one of the parts or both parts have incorrect values within the given range.

2 point paper –

Response shows a correct value for one of the parts while the other part either contains an incorrect value that is within the given range or contains an omission such as not showing the two pattern blocks used.

3 point paper –

Response has an answer of 11 for Part A and uses all the criteria correctly for Part B.

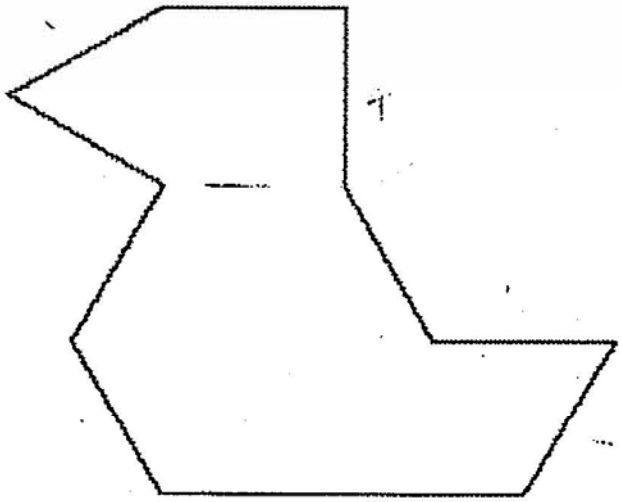
In light of the student work considered on this item, what instructional information could you share with teachers?

When using pattern blocks with students, have them clearly recognize that all sides of the pattern blocks are the same length, except the long side of the trapezoid which is twice the length of the others.

31

From your punch-out tools, use the ruler and the pattern blocks to help you solve this problem.

Brent traced around pattern blocks to make the polygon below.



Part A What is the perimeter of Brent's polygon? On the line below, write your answer.

11 inches

CSAP Math 2005
Grade 4 – Item 31
Score: 3

The student's response accomplishes the task and effectively communicates the student's mathematical understanding.

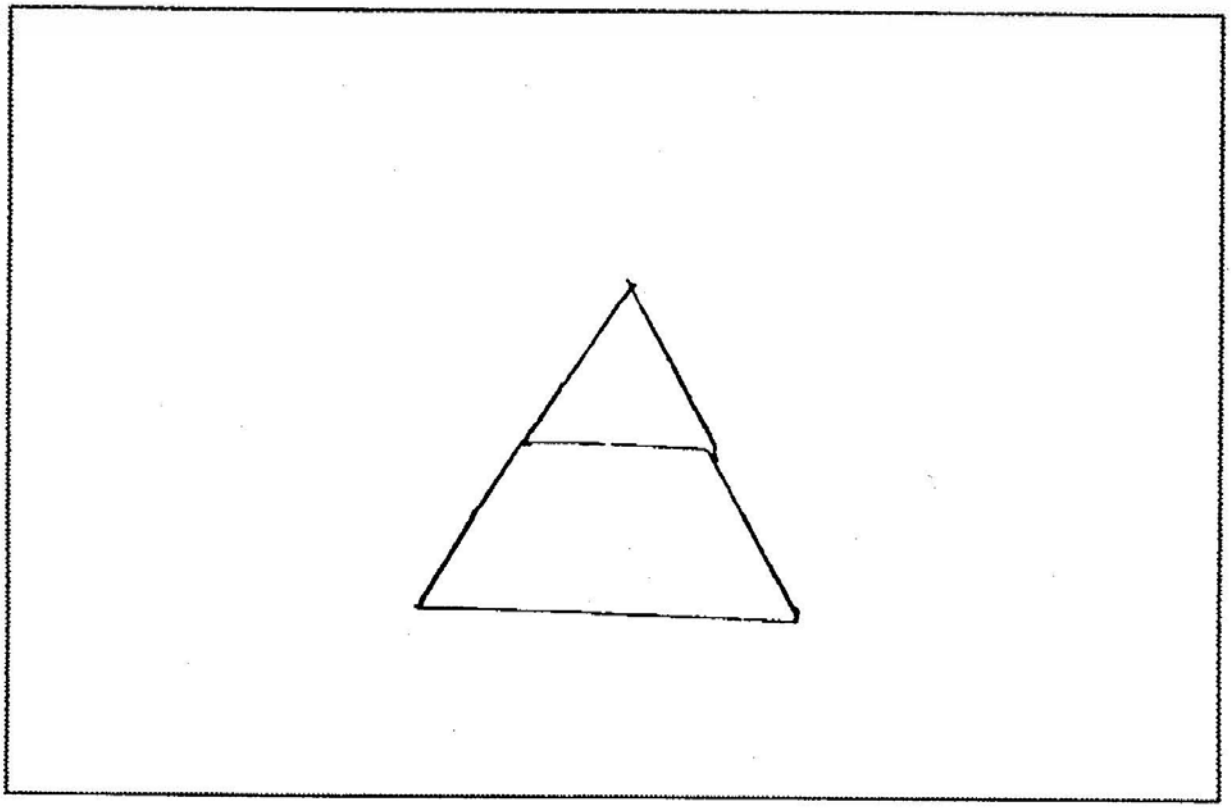
The student has the correct answer of 11 for Part A. For Part B, the student has correctly use the trapezoid and the triangle to trace a polygon with a perimeter of 6.

3 Point Anchor (a)

Part B Use the directions below to make another polygon.

- Use 2 pattern blocks.
- Use each pattern block only once.
- Make a polygon with a perimeter of 6 inches.

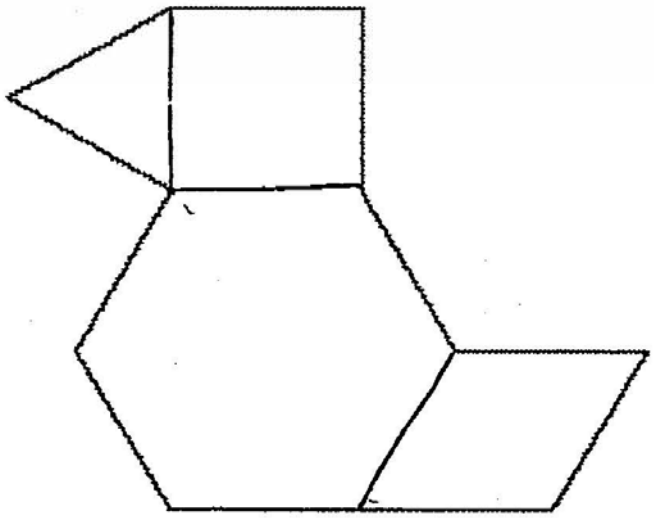
In the space below, trace around the 2 pattern blocks to show the polygon.



3 Point Anchor (b)

31 From your punch-out tools, use the ruler and the pattern blocks to help you solve this problem.

Brent traced around pattern blocks to make the polygon below.



Part A What is the perimeter of Brent's polygon? On the line below, write your answer.

11 inches

CSAP Math 2005
Grade 4 – Item 31
Score: 2

The response provides adequate evidence of the learning necessary to complete the prompted task.

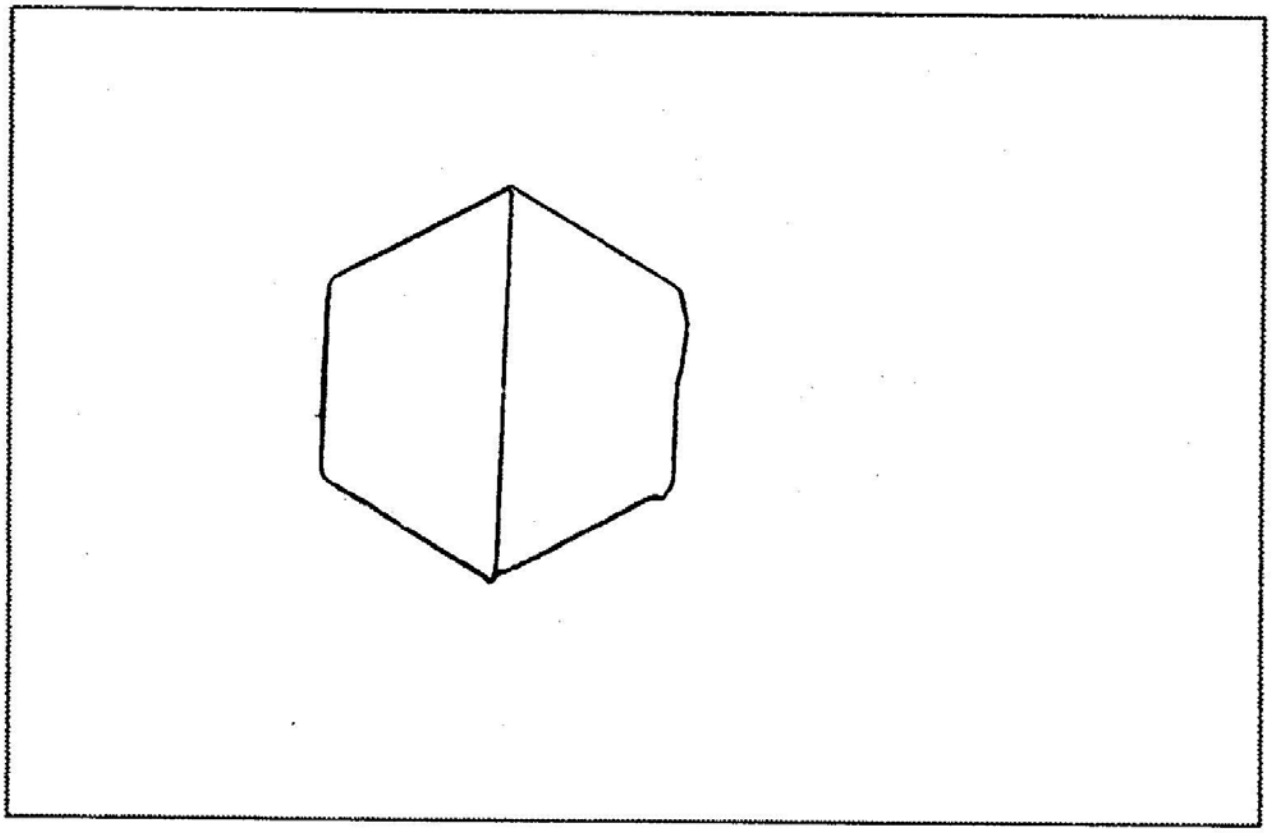
The student has the correct answer of 11 for Part A. In Part B, the student failed to follow the instruction "use each pattern block only once," but the resultant polygon does have a perimeter of 6. That provides evidence that the student could revise the work with the help of written feedback or dialog.

2 Point Anchor (a)

Part B Use the directions below to make another polygon.

- Use 2 pattern blocks.
- Use each pattern block only once.
- Make a polygon with a perimeter of 6 inches.

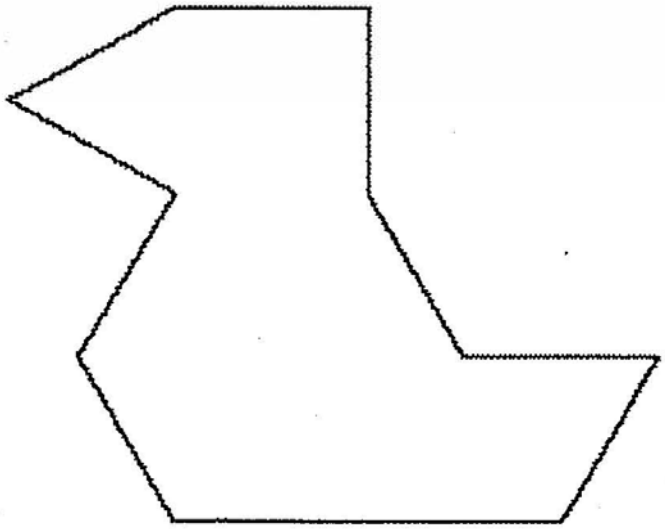
In the space below, trace around the 2 pattern blocks to show the polygon.



31

From your punch-out tools, use the ruler and the pattern blocks to help you solve this problem.

Brent traced around pattern blocks to make the polygon below.



Part A What is the perimeter of Brent's polygon? On the line below, write your answer.

$9\frac{2}{5}$ _____ inches

CSAP Math 2005
Grade 4 – Item 31
Score: 1

The response demonstrates some evidence of mathematical knowledge that is appropriate to the intent of the task.

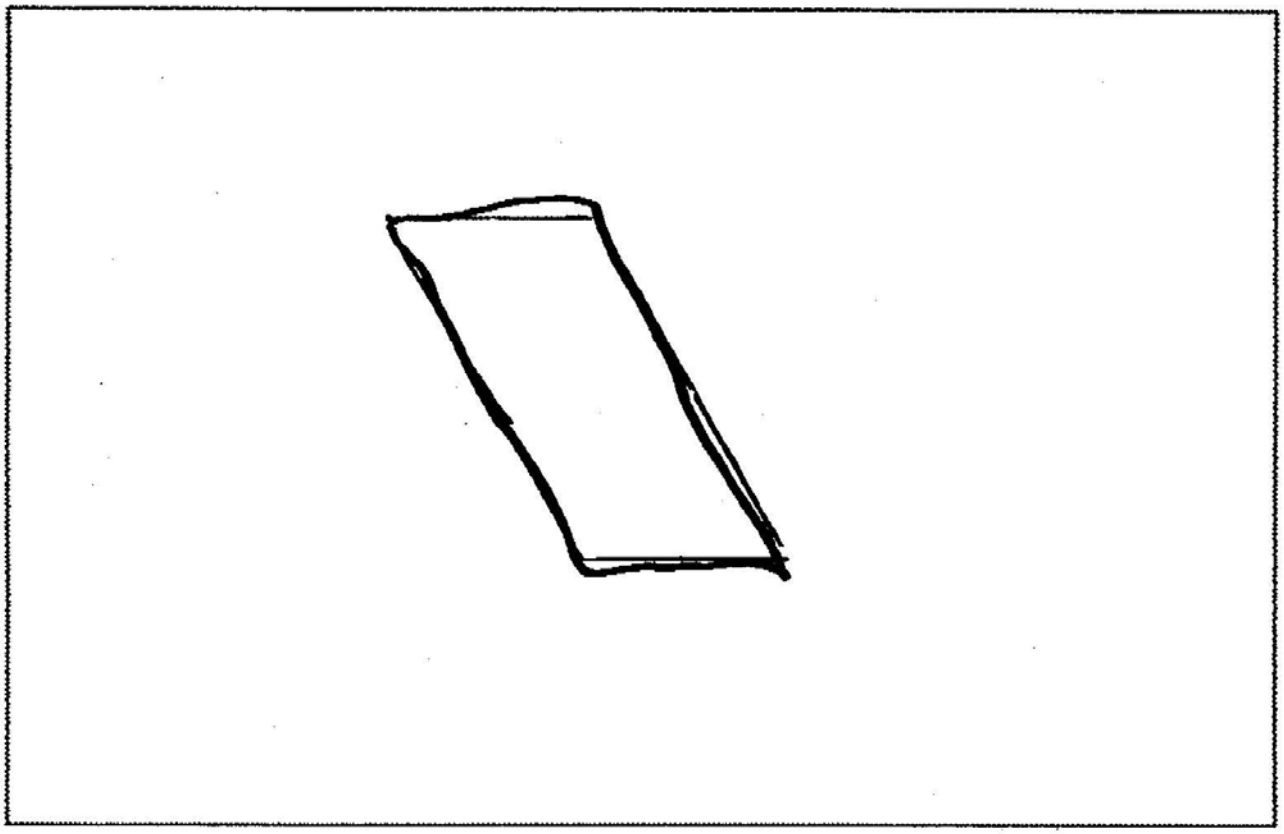
Part A contains an incorrect value for the perimeter of the given figure. Part B does show a polygon with perimeter of 6, but it is not clear which pattern blocks were used to form it.

1 Point Anchor (a)

Part B Use the directions below to make another polygon.

- Use 2 pattern blocks.
- Use each pattern block only once.
- Make a polygon with a perimeter of 6 inches.

In the space below, trace around the 2 pattern blocks to show the polygon.

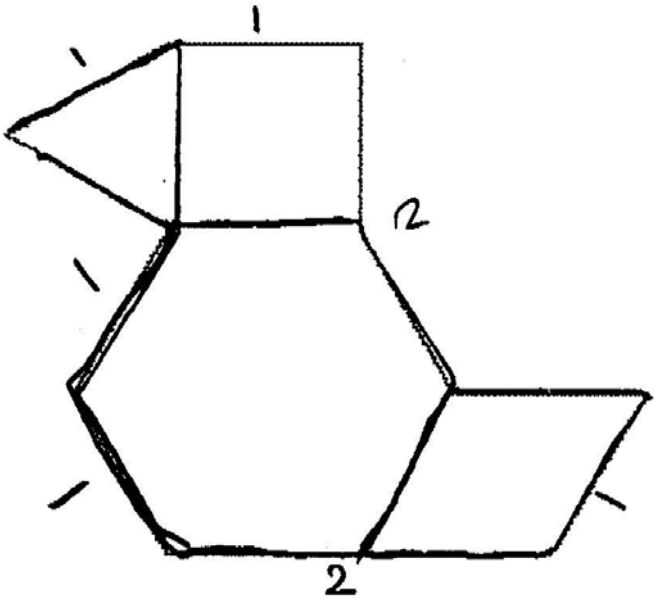


1 Point Anchor (b)

31

From your punch-out tools, use the ruler and the pattern blocks to help you solve this problem.

Brent traced around pattern blocks to make the polygon below.



Part A What is the perimeter of Brent's polygon? On the line below, write your answer.

2211111 inches

CSAP Math 2005
Grade 4 – Item 31
Score: 0

The response lacks evidence of mathematical knowledge that is appropriate to the intent of the task.

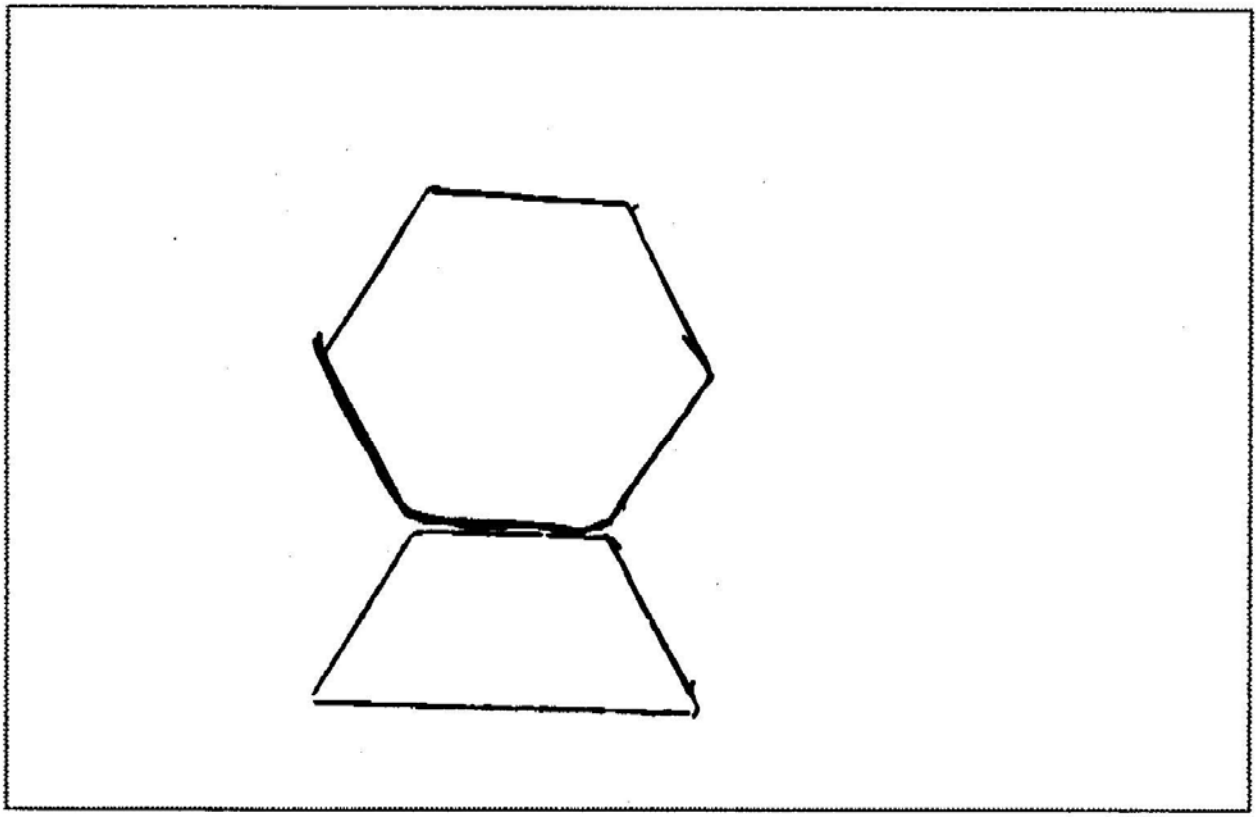
Part A shows no attempt to find the perimeter. For Part B, the student uses two pattern blocks joined to make a perimeter of 8 not 6 as requested.

0 Point Anchor (a)

Part B Use the directions below to make another polygon.

- Use 2 pattern blocks.
- Use each pattern block only once.
- Make a polygon with a perimeter of 6 inches.

In the space below, trace around the 2 pattern blocks to show the polygon.

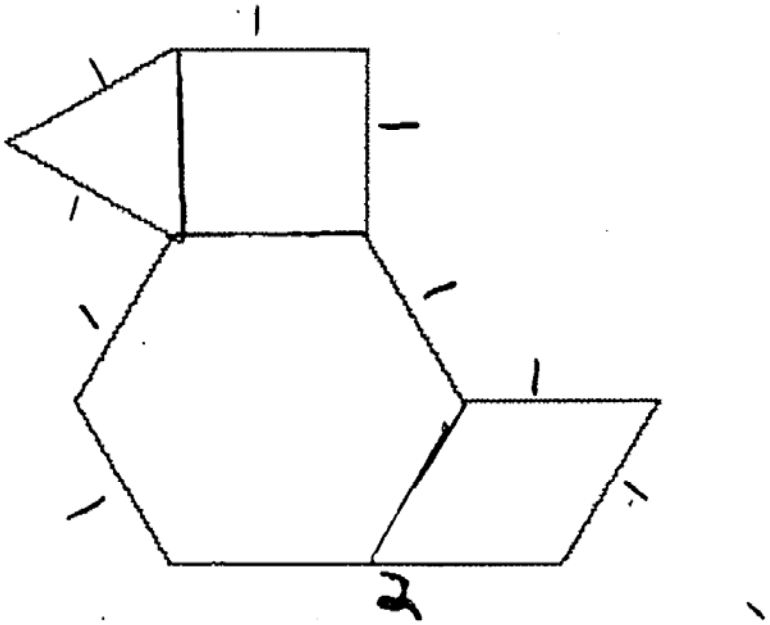


0 Point Anchor (b)

31

From your punch-out tools, use the ruler and the pattern blocks to help you solve this problem.

Brent traced around pattern blocks to make the polygon below.



Part A What is the perimeter of Brent's polygon? On the line below, write your answer.

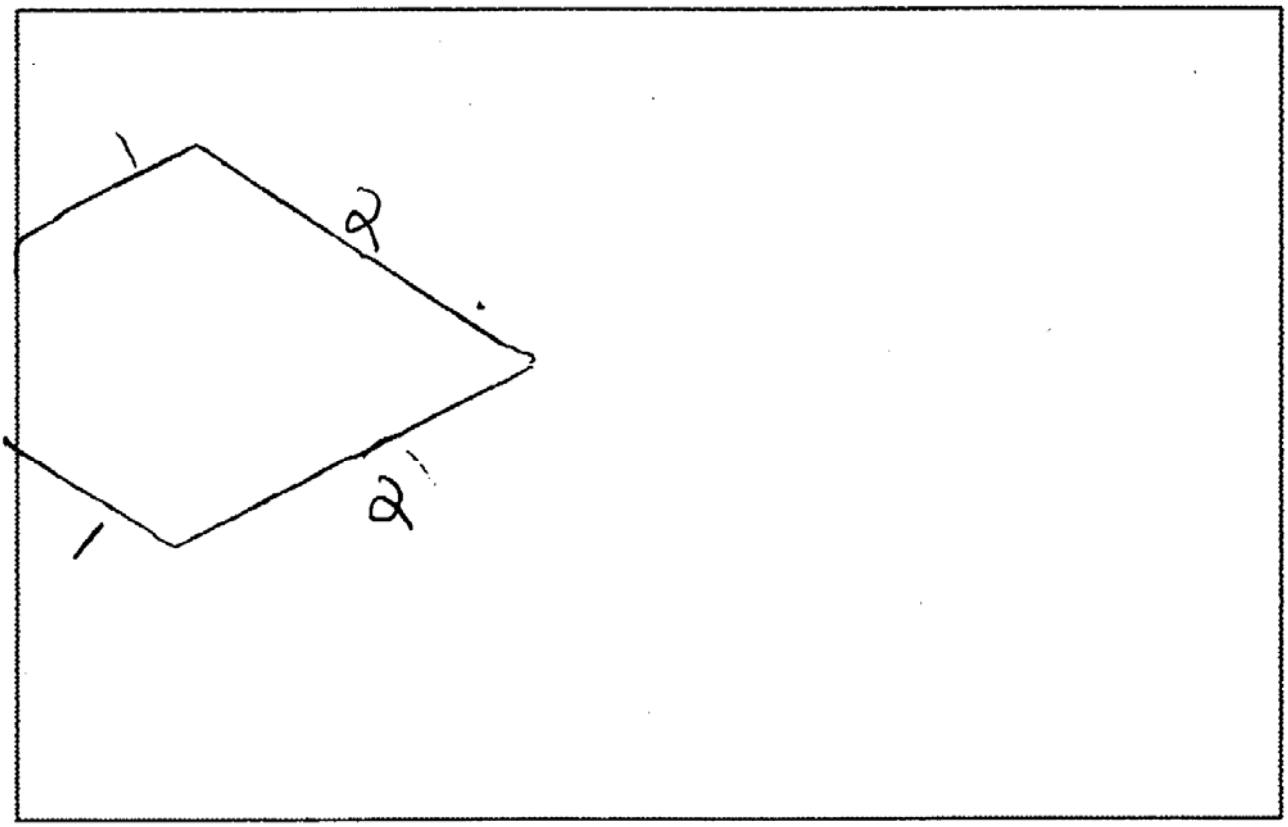
11 inches

Discussion Paper #1 (a)

Part B Use the directions below to make another polygon.

- Use 2 pattern blocks.
- Use each pattern block only once.
- Make a polygon with a perimeter of 6 inches.

In the space below, trace around the 2 pattern blocks to show the polygon.



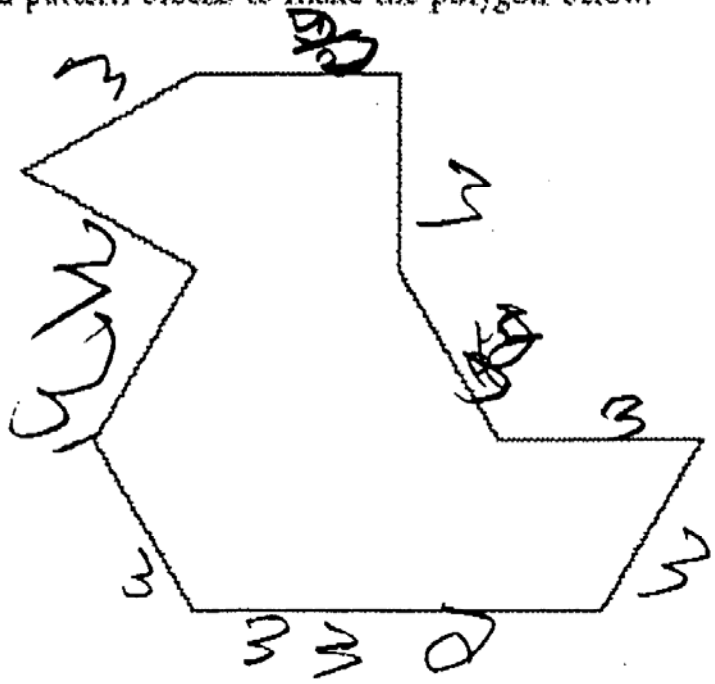
Score:	Scoring Rationale:

Discussion Paper #1 (b)

31

From your punch-out tools, use the ruler and the pattern blocks to help you solve this problem.

Brent traced around pattern blocks to make the polygon below.



Part A What is the perimeter of Brent's polygon? On the line below, write your answer.

33

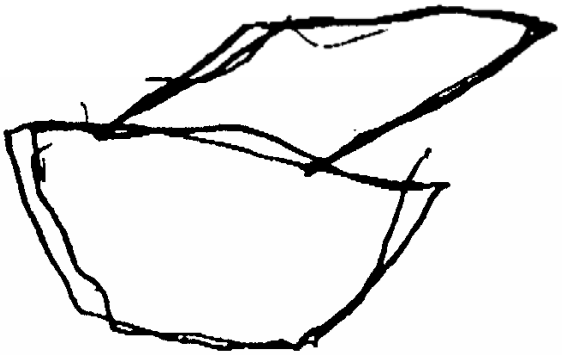
_____ inches

Discussion Paper #2 (a)

Part B Use the directions below to make another polygon.

- Use 2 pattern blocks.
- Use each pattern block only once.
- Make a polygon with a perimeter of 6 inches.

In the space below, trace around the 2 pattern blocks to show the polygon.



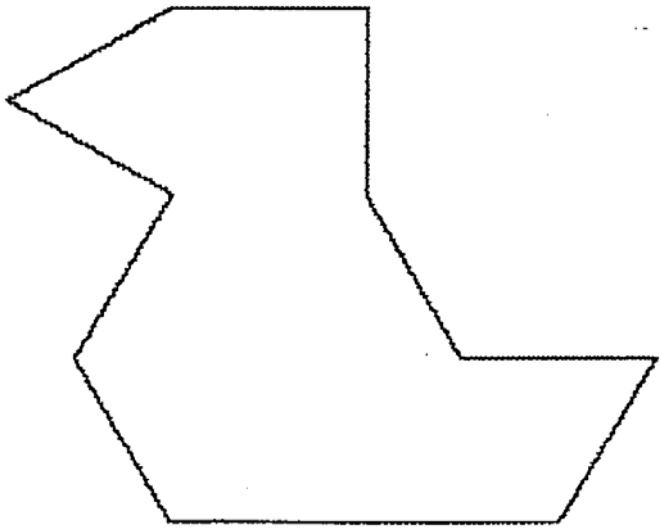
Score:	Scoring Rationale:

Discussion Paper #2 (b)

31

From your punch-out tools, use the ruler and the pattern blocks to help you solve this problem.

Brent traced around pattern blocks to make the polygon below.



Part A What is the perimeter of Brent's polygon? On the line below, write your answer.

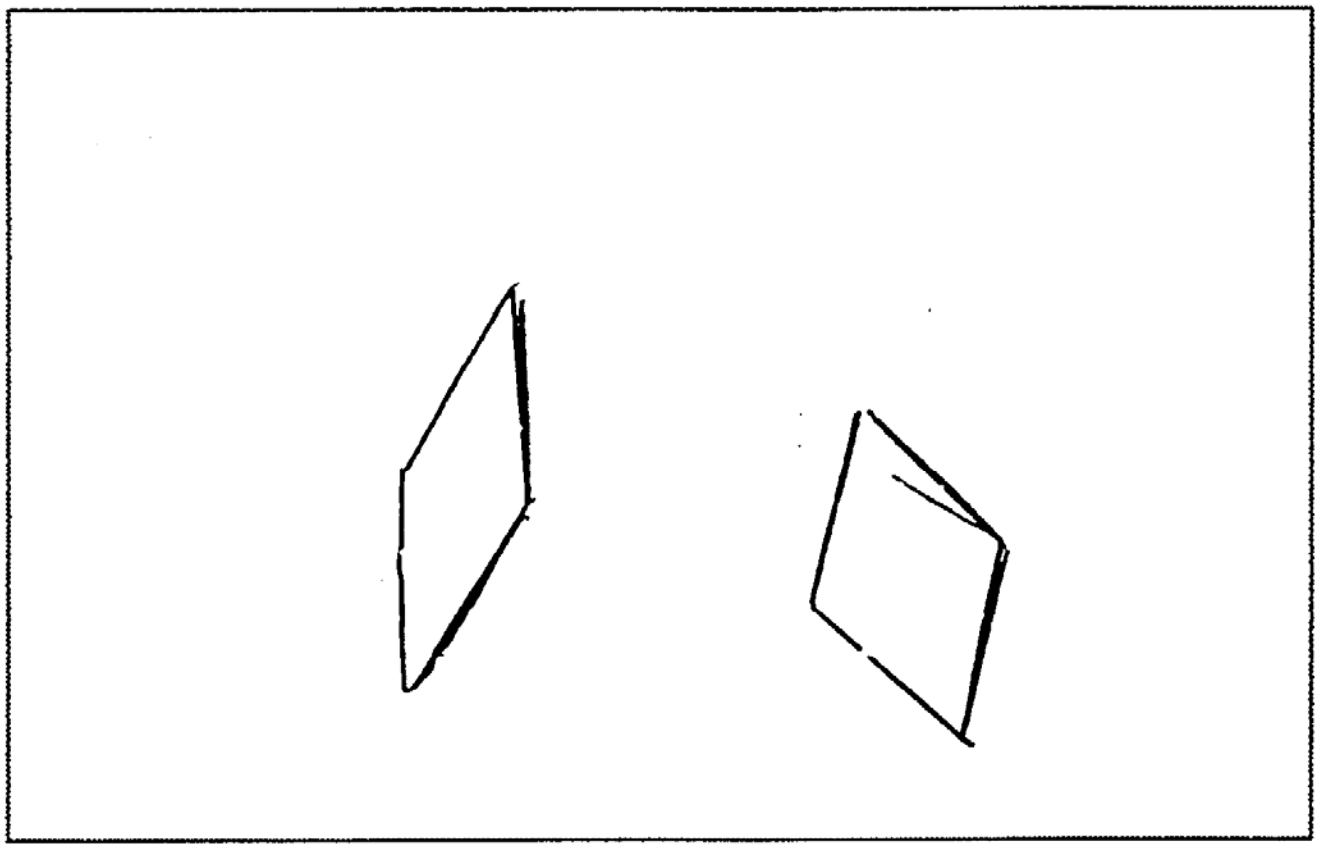
3 1/2 inches

Discussion Paper #3 (a)

Part B Use the directions below to make another polygon.

- Use 2 pattern blocks.
- Use each pattern block only once.
- Make a polygon with a perimeter of 6 inches.

In the space below, trace around the 2 pattern blocks to show the polygon.



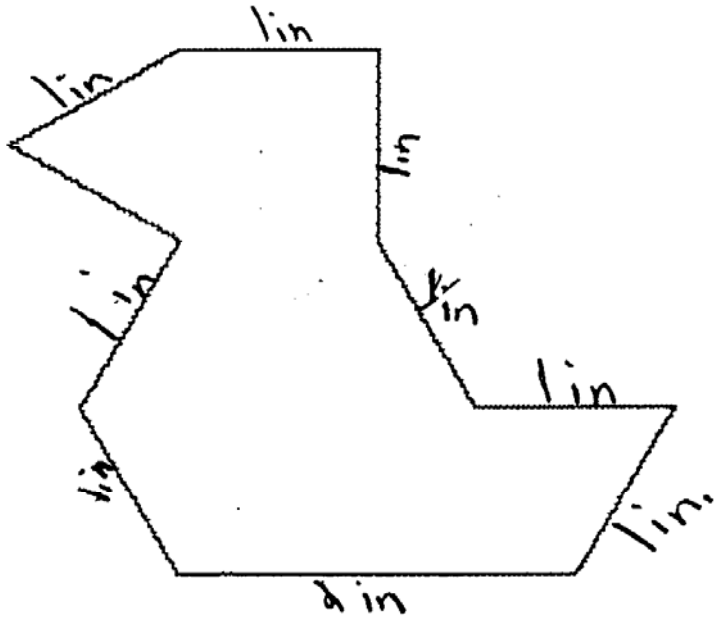
Score:	Scoring Rationale:

Discussion Paper #3 (b)

31

From your punch-out tools, use the ruler and the pattern blocks to help you solve this problem.

Brent traced around pattern blocks to make the polygon below.



Part A What is the perimeter of Brent's polygon? On the line below, write your answer.

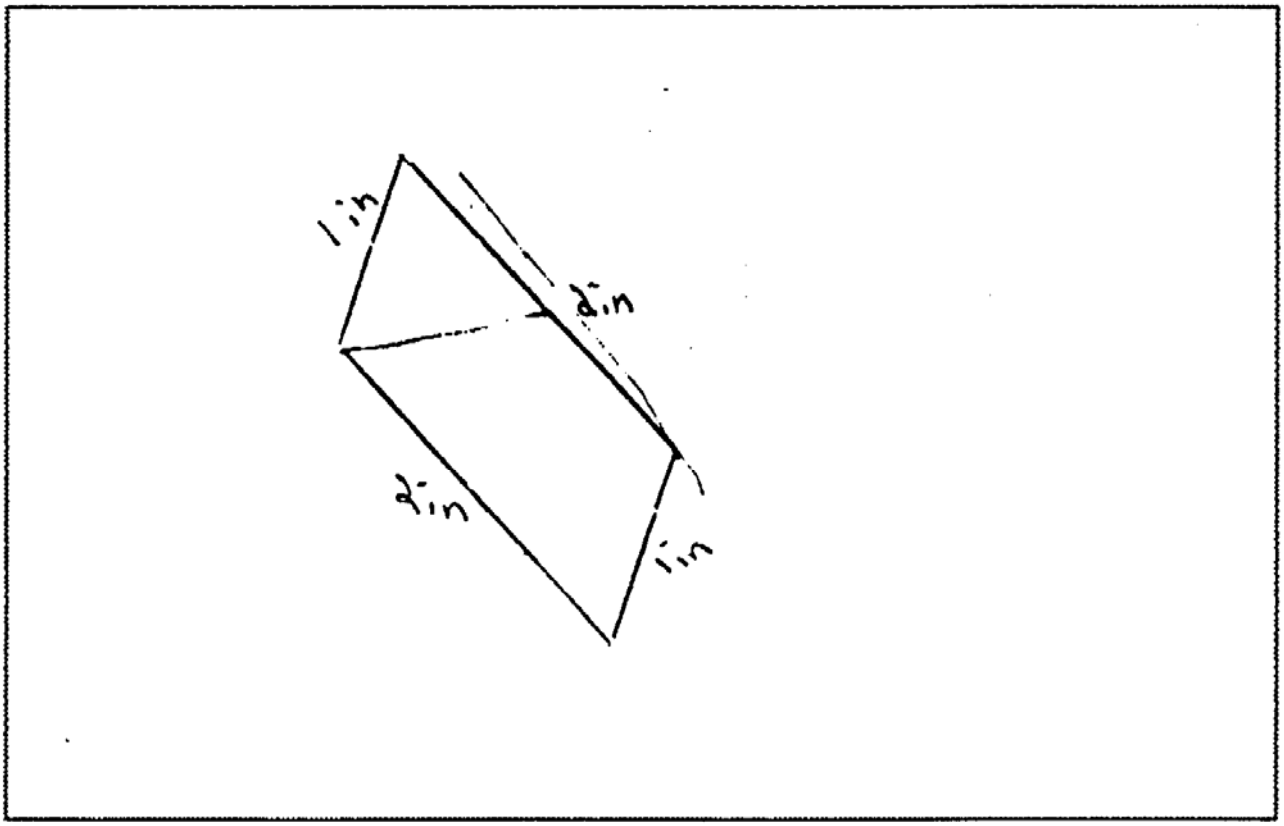
10 inches

Discussion Paper #4 (a)

Part B Use the directions below to make another polygon.

- Use 2 pattern blocks.
- Use each pattern block only once.
- Make a polygon with a perimeter of 6 inches.

In the space below, trace around the 2 pattern blocks to show the polygon.



Score:	Scoring Rationale:

2005 Mathematics Released Item
Discussion Paper Annotations

Grade	Item #	Response ID	Score Given	Annotations
4	**31**	**#1**	2	The student has a correct answer and work for Part A. In Part B the student uses the hexagon and triangle to form a polygon of perimeter 6, except that is not the perimeter of the polygon which must be a closed figure.
4	**31**	**#2**	1	This student appears to know that perimeter is the sum of the lengths of the sides although they are measured incorrectly. Part B gives a polygon with a perimeter of 7 instead of 6.
4	**31**	**#3**	0	There is no indication that the student knows what is meant by polygon or perimeter, or that the student knows how to use a ruler to measure lengths.
4	**31**	**#4**	3	In Part A this student has an incorrect answer of 10. However, from the work, it is clear that the student has measured correctly and knows the concept of perimeter. The student merely forgot to measure one of the sides (a minor omission).