

Education Quality and
Accountability Office



Assessment of Reading, Writing and Mathematics:
Junior Division

Released 2009 Assessment: Mathematics

**Item-Specific Rubrics and
Sample Student Responses with Annotations**

Scoring Guide for Junior Mathematics Open-Response Question 7

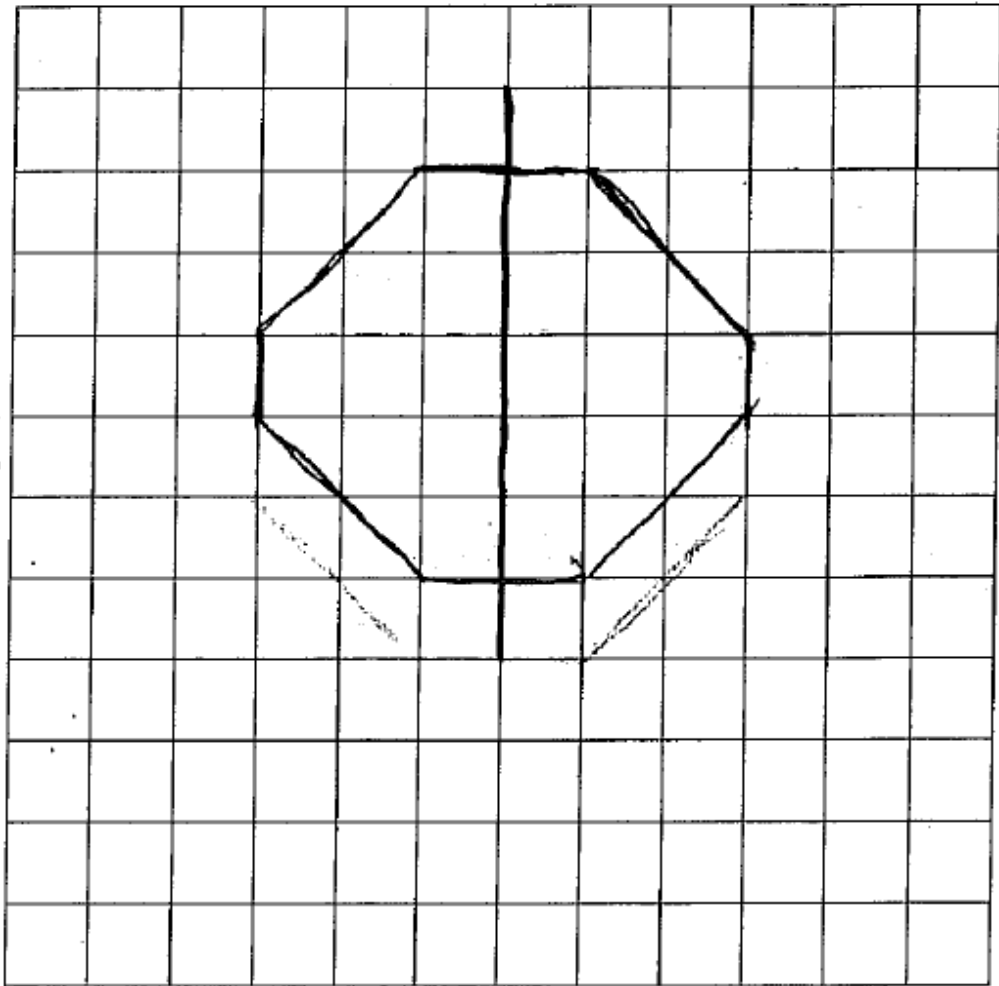
Code	Descriptor
B	<ul style="list-style-type: none"> Blank: nothing written or drawn in response to the question
I	<ul style="list-style-type: none"> Illegible: cannot be read; completely crossed out/erased; not written in English Irrelevant content: does not attempt assigned question (e.g., comment on the task, drawings, “?”, “!”, “I don’t know”) Off topic: no relationship of written work to the question
10	<p>Application of knowledge and skills to construct a pentagon given angle and side measurements shows limited effectiveness due to</p> <ul style="list-style-type: none"> misunderstanding of concepts incorrect selection or misuse of procedures
20	<p>Application of knowledge and skills to construct a pentagon given angle and side measurements shows some effectiveness due to</p> <ul style="list-style-type: none"> partial understanding of the concepts errors and/or omissions in the application of the procedures
30	<p>Application of knowledge and skills to construct a pentagon given angle and side measurements shows considerable effectiveness due to</p> <ul style="list-style-type: none"> an understanding of most of the concepts minor errors and/or omissions in the application of the procedures
40	<p>Application of knowledge and skills to construct a pentagon given angle and side measurements shows a high degree of effectiveness due to</p> <ul style="list-style-type: none"> a thorough understanding of the concepts an accurate application of the procedures (any minor errors and/or omissions do not detract from the demonstration of a thorough understanding)

Scoring Guide for Junior Mathematics Open-Response
Question 7

Code
10

Construct a pentagon on the grid below that meets the following conditions.

- exactly 1 line of symmetry
- 2 obtuse angles
- 2 right angles
- 1 acute angle
- at least 1 side with a length of 3 units



Draw the line of symmetry on your pentagon.

Annotation:

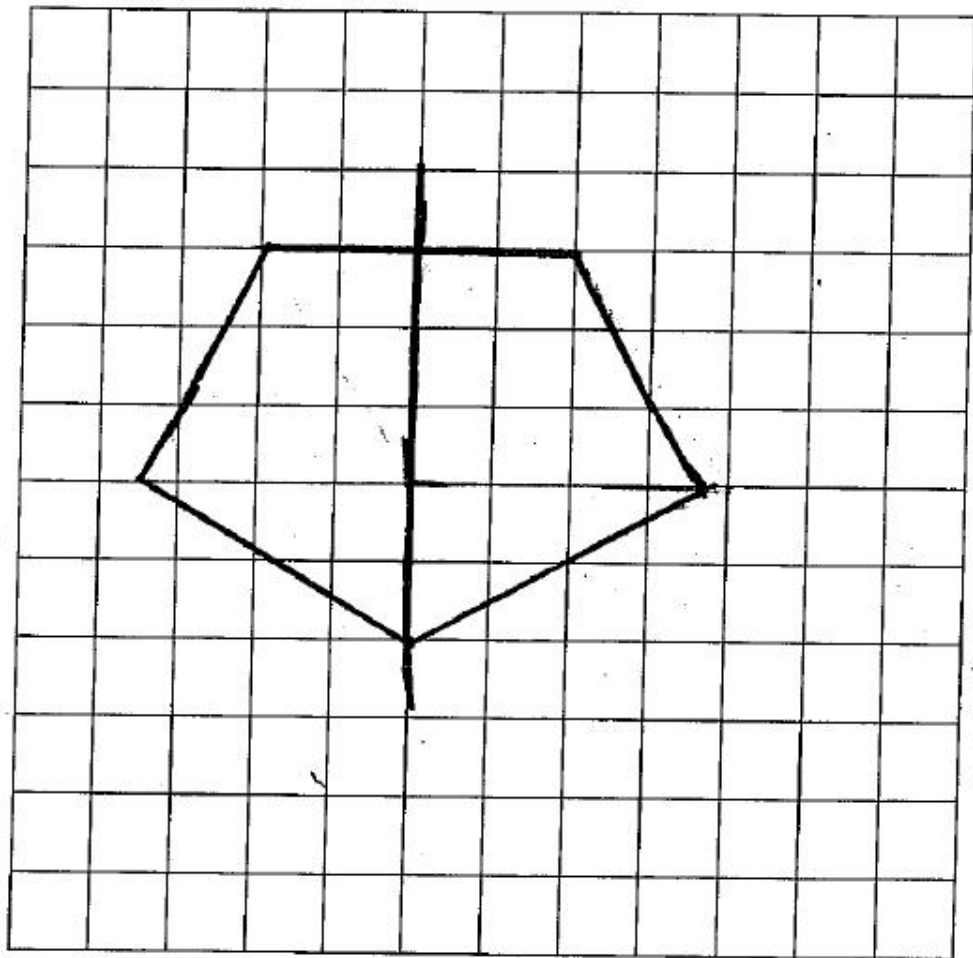
Student demonstrates an incorrect selection of procedures; student draws an octagon.

Scoring Guide for Junior Mathematics Open-Response
Question 7

Code
20

Construct a pentagon on the grid below that meets the following conditions.

- exactly 1 line of symmetry
- 2 obtuse angles
- 2 right angles
- 1 acute angle
- at least 1 side with a length of 3 units



Draw the line of symmetry on your pentagon.

Annotation:

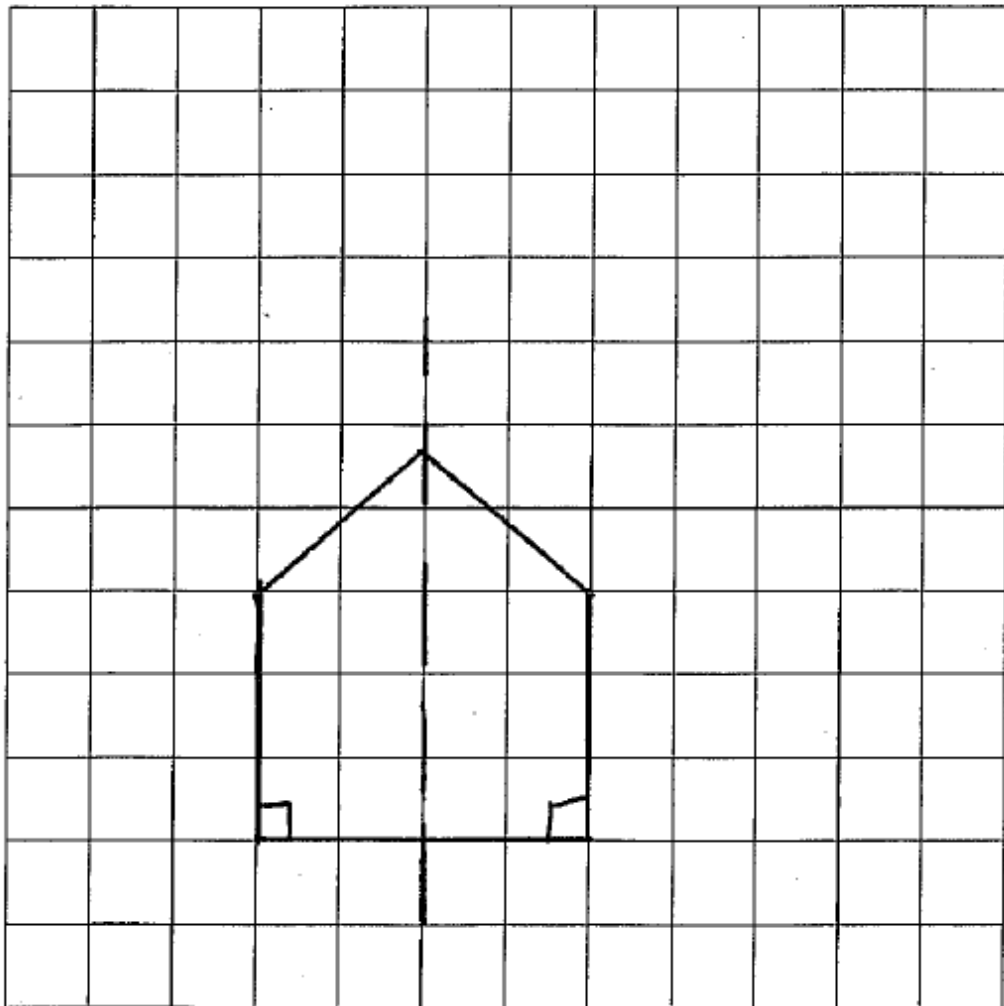
Student makes omissions in the application of procedures; student draws a pentagon however does not include 1 side of 3 units and an acute angle (more than 1 condition not met).

Scoring Guide for Junior Mathematics Open-Response
Question 7

Code
30

Construct a pentagon on the grid below that meets the following conditions.

- exactly 1 line of symmetry
- 2 obtuse angles
- 2 right angles
- 1 acute angle
- at least 1 side with a length of 3 units



Draw the line of symmetry on your pentagon.

Annotation:

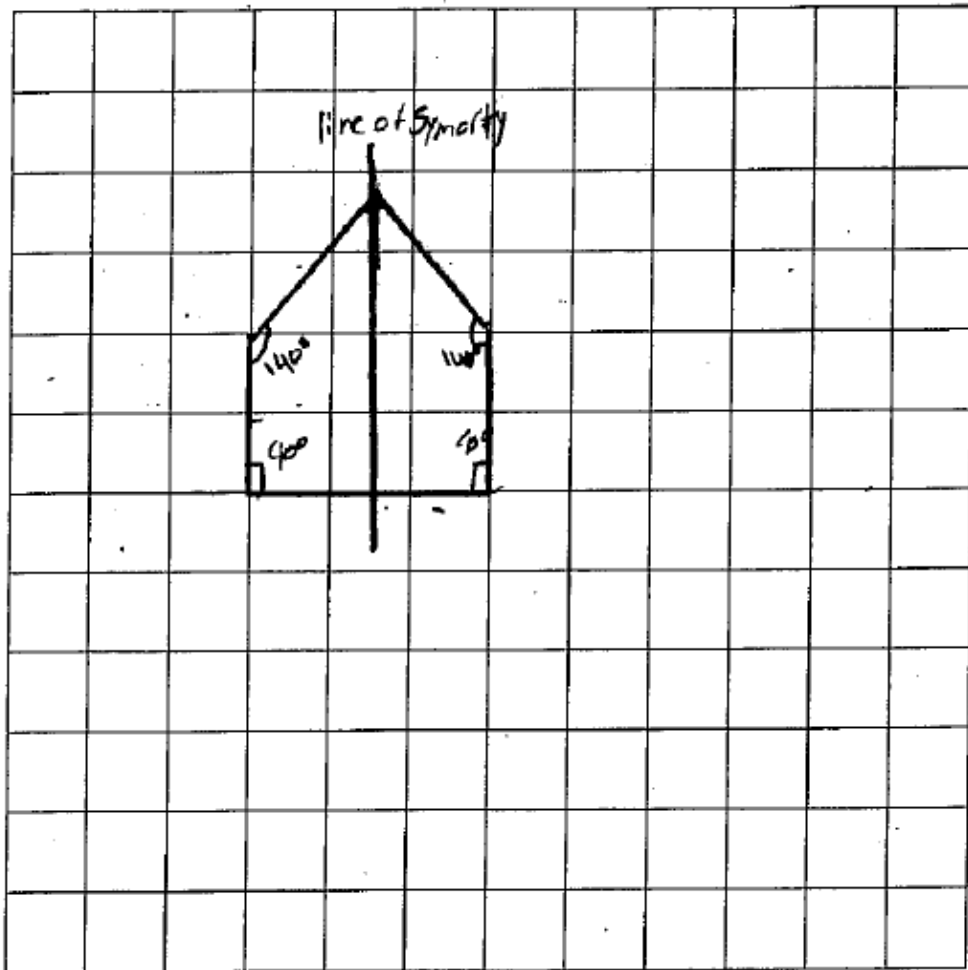
Student makes minor omission in application of procedures; student draws a pentagon but does not include 1 acute angle (1 condition not met).

Scoring Guide for Junior Mathematics Open-Response
Question 7

Code
40

Construct a pentagon on the grid below that meets the following conditions.

- exactly 1 line of symmetry
- 2 obtuse angles
- 2 right angles
- 1 acute angle
- at least 1 side with a length of 3 units



Draw the line of symmetry on your pentagon.

Annotation:

Student demonstrates an accurate application of the procedures; all conditions included in the drawing.

Scoring Guide for Junior Mathematics Open-Response Question 8

Code	Descriptor
B	<ul style="list-style-type: none"> Blank: nothing written or drawn in response to the question
I	<ul style="list-style-type: none"> Illegible: cannot be read; completely crossed out/erased; not written in English Irrelevant content: does not attempt assigned question (e.g., comment on the task, drawings, “?”, “!”, “I don’t know”) Off topic: no relationship of written work to the question
10	<p>Problem-solving process to determine whether the probability that Keenan will randomly choose a yellow marble increases, decreases, or stays the same shows limited effectiveness due to</p> <ul style="list-style-type: none"> minimal evidence of a solution process limited identification of important elements of the problem too much emphasis on unimportant elements of the problem no conclusions presented conclusion presented without supporting evidence
20	<p>Problem-solving process to determine whether the probability that Keenan will randomly choose a yellow marble increases, decreases, or stays the same shows some effectiveness due to</p> <ul style="list-style-type: none"> an incomplete solution process identification of some of the important elements of the problem some understanding of the relationships between important elements of the problem simple conclusions with little supporting evidence
30	<p>Problem-solving process to determine whether the probability that Keenan will randomly choose a yellow marble increases, decreases, or stays the same shows considerable effectiveness due to</p> <ul style="list-style-type: none"> a solution process that is nearly complete identification of most of the important elements of the problem a considerable understanding of the relationships between important elements of the problem appropriate conclusions with supporting evidence
40	<p>Problem-solving process to determine whether the probability that Keenan will randomly choose a yellow marble increases, decreases, or stays the same shows a high degree of effectiveness due to</p> <ul style="list-style-type: none"> a complete solution process identification of all important elements of the problem a thorough understanding of the relationships between all of the important elements of the problem appropriate conclusions with thorough and insightful supporting evidence

Scoring Guide for Junior Mathematics Open-Response
Question 8

Code
10

Keenan places 3 green marbles, 4 yellow marbles and 1 blue marble in a bag.

Keenan then adds 1 green marble and 1 yellow marble to the bag.

Does the probability that Keenan will randomly choose a yellow marble increase, decrease or stay the same?

Circle one: Increases Decreases Stays the same

Justify your answer. because there's 3 green and 4 yellow then she added 1 of yellow and green so its the same

Annotation:

Student demonstrates minimal evidence of a solution process; no evidence of probability; states that a difference of 1 marble between yellow and green both before and after means the probability of choosing yellow stays the same.

Scoring Guide for Junior Mathematics Open-Response
Question 8

Code
20

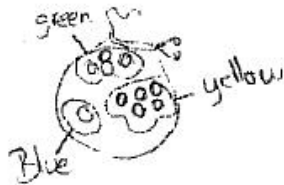
Keenan places 3 green marbles, 4 yellow marbles and 1 blue marble in a bag.

Keenan then adds 1 green marble and 1 yellow marble to the bag.

Does the probability that Keenan will randomly choose a yellow marble increase, decrease or stay the same?

Circle one: Increases Decreases Stays the same

Justify your answer.



First there were 8 marbles
Now there are 10 marbles.

By adding more yellow marbles there is a
greater probability of picking a yellow marble.

Annotation:

Student identifies some of the important elements of the problem; starts to compare probabilities by stating total outcomes before and after but incorrectly concludes that by adding more to the yellow marbles the probability increases.

Scoring Guide for Junior Mathematics Open-Response
Question 8

Code
30

Keenan places 3 green marbles, 4 yellow marbles and 1 blue marble in a bag.

Keenan then adds 1 green marble and 1 yellow marble to the bag.

Does the probability that Keenan will randomly choose a yellow marble increase, decrease or stay the same?

Circle one:

Increases

Decreases

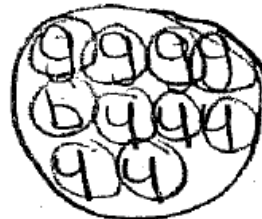
Stays the same

Justify your answer.

It stays the same because there are 5 yellow marbles and 5 different marbles, therefore Keenan has a 50, 50 chance of pulling out a yellow marble.

$$\text{Yellow } \frac{5}{10}$$

$\frac{5}{5}$ different marbles



Annotation:

Student makes appropriate conclusions with supporting evidence; correctly determines the probability of choosing a yellow marble after; correctly states that the probability stays the same but does not determine the probability of choosing a yellow marble before the extra marbles are added.

Scoring Guide for Junior Mathematics Open-Response
Question 8

Code
40

Keenan places 3 green marbles, 4 yellow marbles and 1 blue marble in a bag.

Keenan then adds 1 green marble and 1 yellow marble to the bag.

Does the probability that Keenan will randomly choose a yellow marble increase, decrease or stay the same?

Circle one: Increases Decreases Stays the same

Justify your answer.

$4Y$ $4 = 50\%$
 $3G$ $3 = 50\%$
 $1B$

$5Y = 50\%$
 $4G = 50\%$
 $1B = 50\%$

It will stay
the same.

Annotation:

Student identifies all important elements of the problem; correctly compares percentage for before and after adding the marbles to justify conclusion.

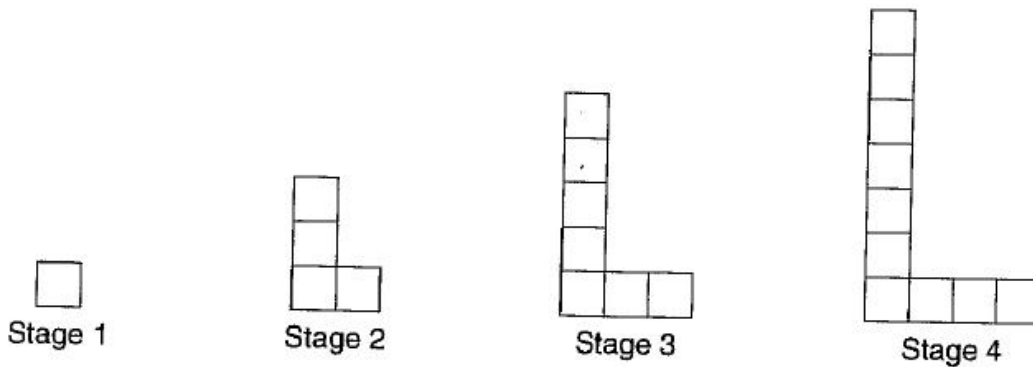
Scoring Guide for Junior Mathematics Open-Response Question 9

Code	Descriptor
B	<ul style="list-style-type: none"> Blank: nothing written or drawn in response to the question
I	<ul style="list-style-type: none"> Illegible: cannot be read; completely crossed out/erased; not written in English Irrelevant content: does not attempt assigned question (e.g., comment on the task, drawings, “?”, “!”, “I don’t know”) Off topic: no relationship of written work to the question
10	<p>Problem-solving process to determine the number of stages that can be completed using 50 blocks in a geometric pattern shows limited effectiveness due to</p> <ul style="list-style-type: none"> minimal evidence of a solution process limited identification of important elements of the problem too much emphasis on unimportant elements of the problem no conclusions presented conclusion presented without supporting evidence
20	<p>Problem-solving process to determine the number of stages that can be completed using 50 blocks in a geometric pattern shows some effectiveness due to</p> <ul style="list-style-type: none"> an incomplete solution process identification of some of the important elements of the problem some understanding of the relationships between important elements of the problem simple conclusions with little supporting evidence
30	<p>Problem-solving process to determine the number of stages that can be completed using 50 blocks in a geometric pattern shows considerable effectiveness due to</p> <ul style="list-style-type: none"> a solution process that is nearly complete identification of most of the important elements of the problem a considerable understanding of the relationships between important elements of the problem appropriate conclusions with supporting evidence
40	<p>Problem-solving process to determine the number of stages that can be completed using 50 blocks in a geometric pattern shows a high degree of effectiveness due to</p> <ul style="list-style-type: none"> a complete solution process identification of all important elements of the problem a thorough understanding of the relationships between all of the important elements of the problem appropriate conclusions with thorough and insightful supporting evidence

**Scoring Guide for Junior Mathematics Open-Response
Question 9**

**Code
10**

Ms. Lewis has 50 blocks. She uses 22 of these blocks to make the pattern shown below.



How many stages will Ms. Lewis be able to complete with the 50 blocks?

Justify your answer.

50 blocks

22 blocks for 4 stages

8 stages equals 44 blocks.

she will be able to
make 8 stages with
6 blocks left over.

$$\begin{array}{r}
 22 \\
 + 22 \\
 \hline
 44 \\
 + 6 \\
 \hline
 50
 \end{array}$$

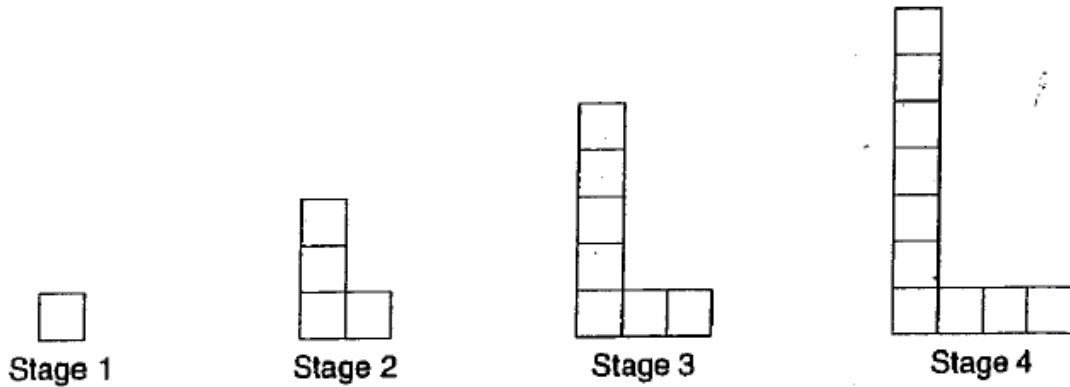
Annotation:

Student places too much emphasis on unimportant elements of the problem; doubles the information provided; does not address stages 5-8.

Scoring Guide for Junior Mathematics Open-Response Question 9

Code
20

Ms. Lewis has 50 blocks. She uses 22 of these blocks to make the pattern shown below.



How many stages will Ms. Lewis be able to complete with the 50 blocks?

Justify your answer.

pattern + add 3

$$22 + 3 = 25 + 3 = 28 + 3 = 31 + 3 = 34 + 3 = 37 + 3 = 40 + 3 = 43 + 3 = 46 + 3 = 49$$

↓
9 stages + 4 stages = 13 stages

Ms Lewis will be able to complete up to stage 13.

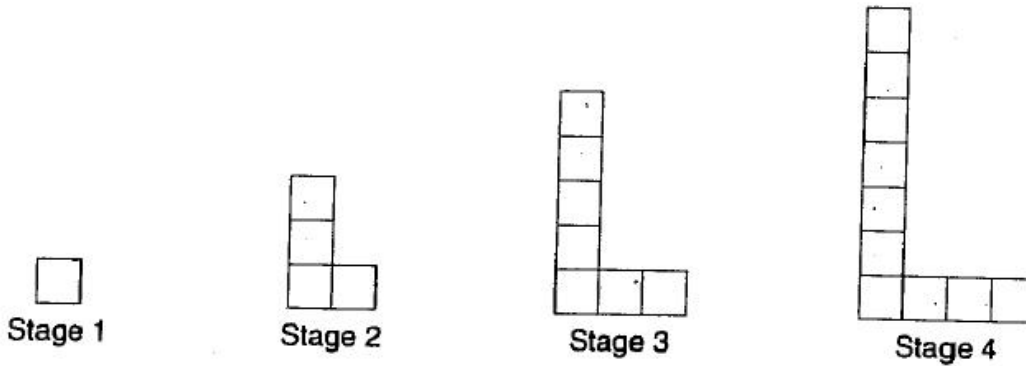
Annotation:

Student identifies some of the important elements of the problem; uses the patterning rule of “add 3” to each stage to total 50 blocks but this is not a cumulative total.

Scoring Guide for Junior Mathematics Open-Response Question 9

**Code
30**

Ms. Lewis has 50 blocks. She uses 22 of these blocks to make the pattern shown below.



How many stages will Ms. Lewis be able to complete with the 50 blocks?

Justify your answer.

$50 - 22 = 28$

stage #	# of blocks	total # of blocks
1	1	1
2	4	5
3	7	12
4	10	22
5	13	35
6	16	51

She will be able to complete 6 stages

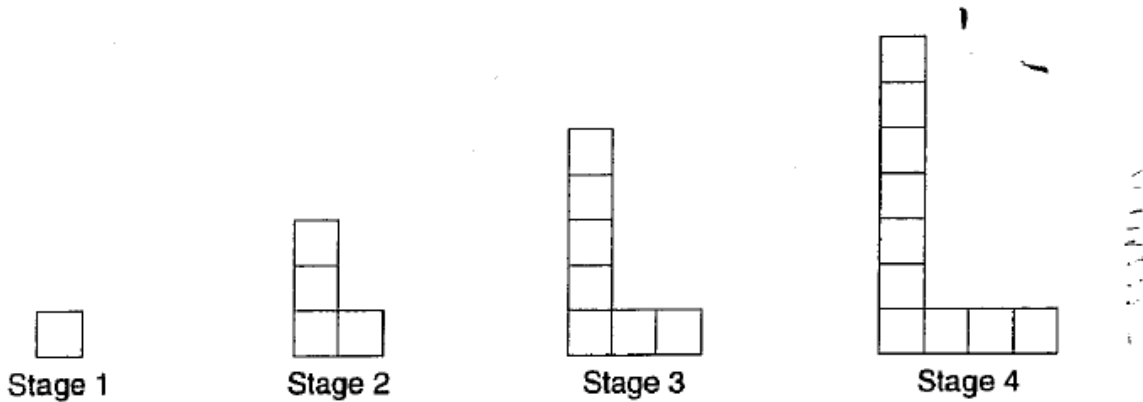
Annotation:

Student identifies most of the important elements of the problem; extends the pattern correctly but does not acknowledge the extra block needed (51 not 50) at Stage 6 and makes an incorrect conclusion.

Scoring Guide for Junior Mathematics Open-Response Question 9

Code
40

Ms. Lewis has 50 blocks. She uses 22 of these blocks to make the pattern shown below.



How many stages will Ms. Lewis be able to complete with the 50 blocks?

Justify your answer.

1 2 3 4 5 6

Ms Lewis would only be able to make 5 stages because 6 stages would be 51 blocks and she only has 50 blocks

Annotation:

Student makes appropriate conclusion with thorough and insightful supporting evidence; correctly extends the pattern; arrives at correct conclusion and gives evidence that there are not enough blocks to create Stage 6.

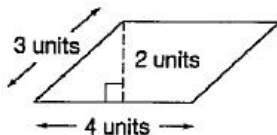
Scoring Guide for Junior Mathematics Open-Response Question 10

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10	<p>Application of knowledge and skills to construct a triangle and a rectangle with the same area as a parallelogram shown shows limited effectiveness due to</p> <ul style="list-style-type: none"> misunderstanding of concepts incorrect selection or misuse of procedures
20	<p>Application of knowledge and skills to construct a triangle and a rectangle with the same area as a parallelogram shown shows some effectiveness due to</p> <ul style="list-style-type: none"> partial understanding of the concepts errors and/or omissions in the application of the procedures
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Scoring Guide for Junior Mathematics Open-Response Question 10

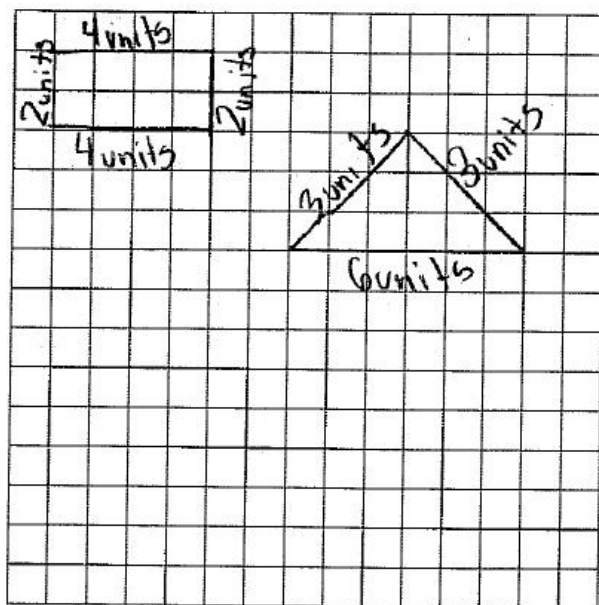
Code
10

Determine the area of the parallelogram below.



The area of the parallelogram is 12.

Draw a triangle and a rectangle each with the same area as the parallelogram. Use the grid below.



<p>Justify your answers.</p> <p style="text-align: center;"><u>rectangle</u></p> $4 + 4 = 8$ $2 + 2 = 4$ $\begin{array}{r} 8 \\ +4 \\ \hline 12 \text{ units} \end{array}$	<p style="text-align: center;"><u>triangle</u></p> $3 + 3 = 6$ $6 + 6 = 12 \text{ units}$
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Annotation:

Student makes an incorrect selection of procedures; incorrect calculation of the area of the parallelogram (12); neither the rectangle nor the triangle have areas of 12 (appears to use perimeter).

Scoring Guide for Junior Mathematics Open-Response Question 10

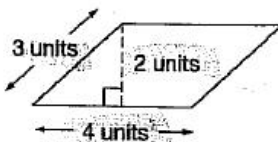
Code
20

Determine the area of the parallelogram below.

$$A = b \times h$$

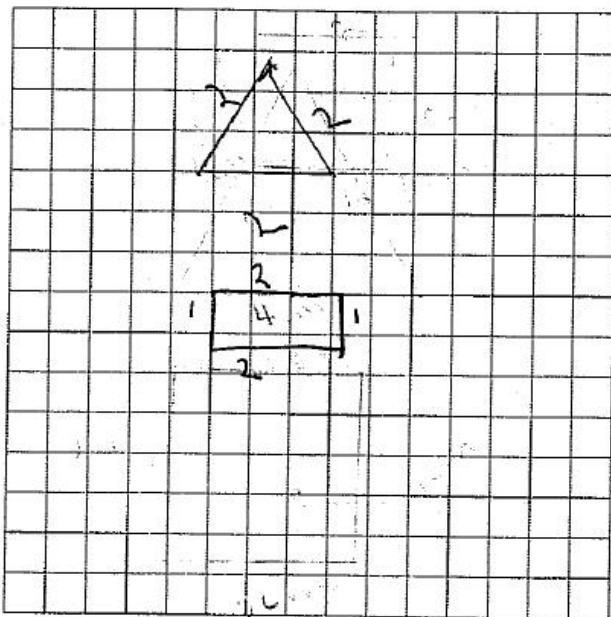
$$A = 4 \text{ cm} \times 2 \text{ cm}$$

$$A = 8 \text{ cm}^2$$



The area of the parallelogram is 8 cm².

Draw a triangle and a rectangle each with the same area as the parallelogram. Use the grid below.



Justify your answers.

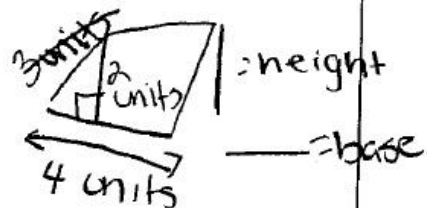
$$2 \text{ cm} \times 2 \text{ cm} \times 2 \text{ cm} = 8 \text{ cm}^2$$

$$2 \text{ cm} \times 2 \text{ cm} \times 1 \text{ cm} \times 1 \text{ cm} = 8 \text{ cm}^2$$

$$A = b \times h$$

$$A = 4 \text{ cm} \times 2 \text{ cm}$$

$$A = 8 \text{ cm}^2$$



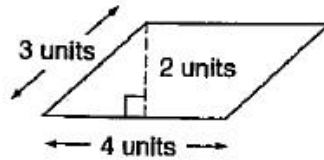
Annotation:

Student makes errors in the application of the procedures; area of parallelogram correct but neither rectangle nor triangle drawn matches calculated area.

Scoring Guide for Junior Mathematics Open-Response
Question 10

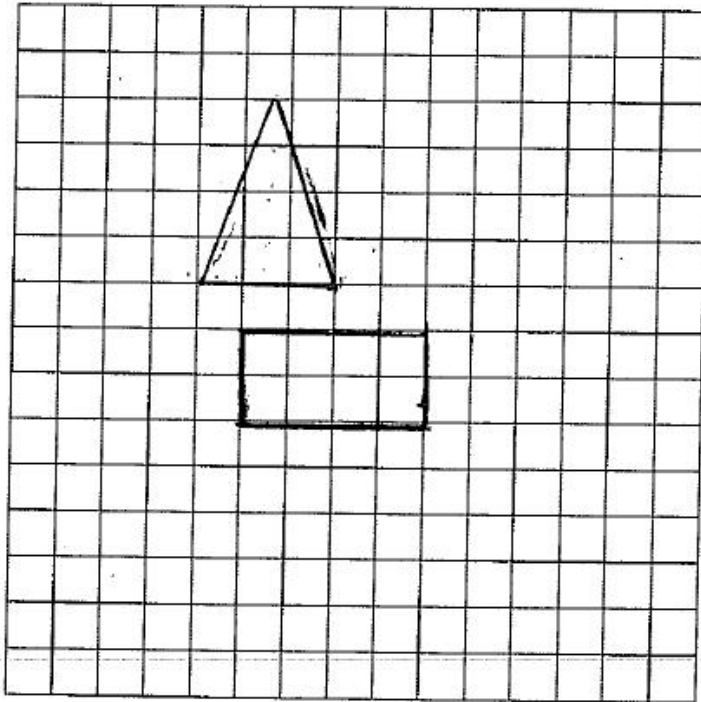
Code
30

Determine the area of the parallelogram below.



The area of the parallelogram is 8 unit square

Draw a triangle and a rectangle each with the same area as the parallelogram. Use the grid below.



Justify your answers.

$$2 \times 4 = 8 \text{ units}^2$$

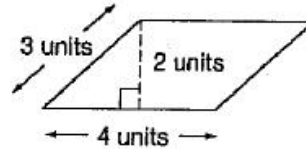
Annotation:

Student demonstrates an understanding of most of the concepts; area of parallelogram accurately calculated and constructs rectangle with same area; triangle shown does not have a matching area.

Scoring Guide for Junior Mathematics Open-Response
Question 10

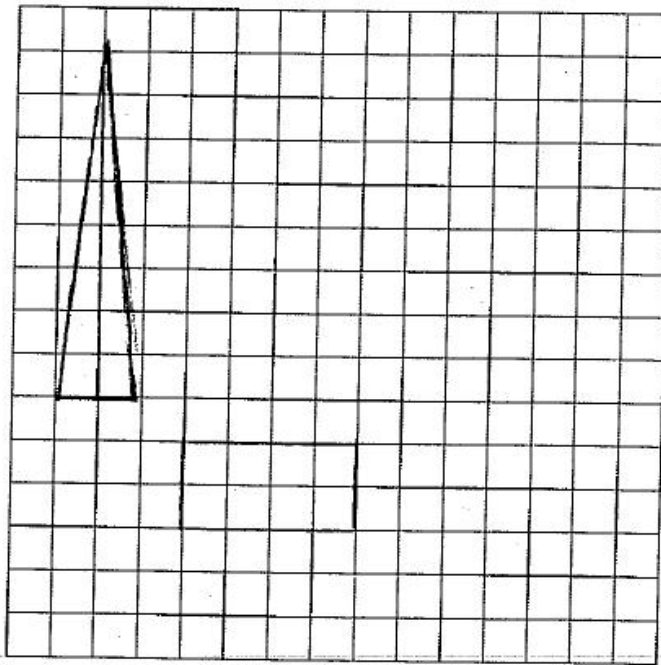
Code
40

Determine the area of the parallelogram below.



The area of the parallelogram is 8 units².

Draw a triangle and a rectangle each with the same area as the parallelogram. Use the grid below.



Justify your answers.

$$\begin{array}{l|l} \text{Triangle} = b \times h \div 2 = \text{area} & \text{Rectangle} = l \times w = \text{area} \\ = (2 \times 8) \div 2 & = 4 \times 2 \\ = 16 \text{ cm}^2 \div 2 & = 8 \text{ cm}^2 \\ = 8 \text{ cm}^2 & \end{array}$$

Annotation:

Student demonstrates a thorough understanding of the concepts; accurately constructs a rectangle and triangle with an area of 8 square units with justification.

Scoring Guide for Junior Mathematics Open-Response Question 27

Code	Descriptor
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10	<p>Problem-solving process to draw a broken-line graph and explain its appropriateness shows limited effectiveness due to</p> <ul style="list-style-type: none"> minimal evidence of a solution process limited identification of important elements of the problem too much emphasis on unimportant elements of the problem no conclusions presented conclusion presented without supporting evidence
20	<p>Problem-solving process to draw a broken-line graph and explain its appropriateness shows some effectiveness due to</p> <ul style="list-style-type: none"> an incomplete solution process identification of some of the important elements of the problem some understanding of the relationships between important elements of the problem simple conclusions with little supporting evidence
30	<p>Problem-solving process to draw a broken-line graph and explain its appropriateness shows considerable effectiveness due to</p> <ul style="list-style-type: none"> a solution process that is nearly complete identification of most of the important elements of the problem a considerable understanding of the relationships between important elements of the problem appropriate conclusions with supporting evidence
40	<p>Problem-solving process to draw a broken-line graph and explain its appropriateness shows a high degree of effectiveness due to</p> <ul style="list-style-type: none"> a complete solution process identification of all important elements of the problem a thorough understanding of the relationships between all of the important elements of the problem appropriate conclusions with thorough and insightful supporting evidence

Scoring Guide for Junior Mathematics Open-Response Question 27

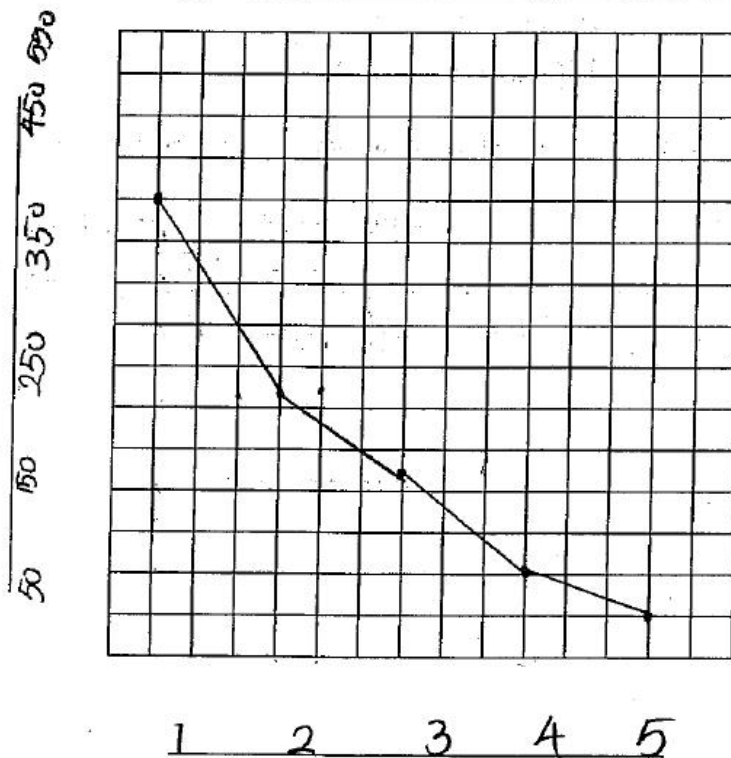
**Code
10**

The table below shows the weekly video sales at a store over a five-week period.

Videos Sold

Week	1	2	3	4	5
Number of videos sold	550	325	275	100	50

Draw a broken-line graph to represent this data. Show titles and labels on the graph.



Explain why a broken-line graph is the most appropriate graph to represent this data.

Follow number 1 ~ number 5 all take desend.

Annotation:

Student demonstrates limited identification of important elements of the problem; student copies numbers from table onto vertical axis; explanation is unrelated to question.

Scoring Guide for Junior Mathematics Open-Response
Question 27

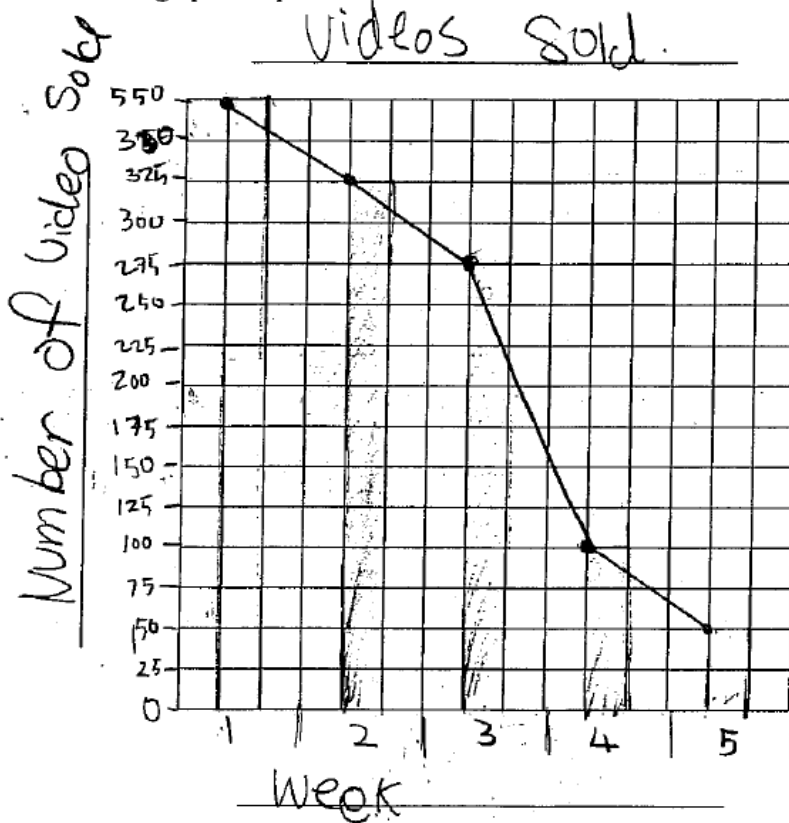
Code
20

12 The table below shows the weekly video sales at a store over a five-week period.

Videos Sold

Week	1	2	3	4	5
Number of videos sold	550	325	275	100	50

Draw a broken-line graph to represent this data. Show titles and labels on the graph.



Explain why a broken-line graph is the most appropriate graph to represent this data.

When we use this graph it is very useful to see how it got different, and how many it sold.

Annotation:

Student demonstrates some understanding of the relationships between important elements of the problem; vertical scale inaccurately jumps from 350 to 550 to accommodate for range of data; points plotted accurately; explanation does not support choice of broken line graph.

Scoring Guide for Junior Mathematics Open-Response Question 27

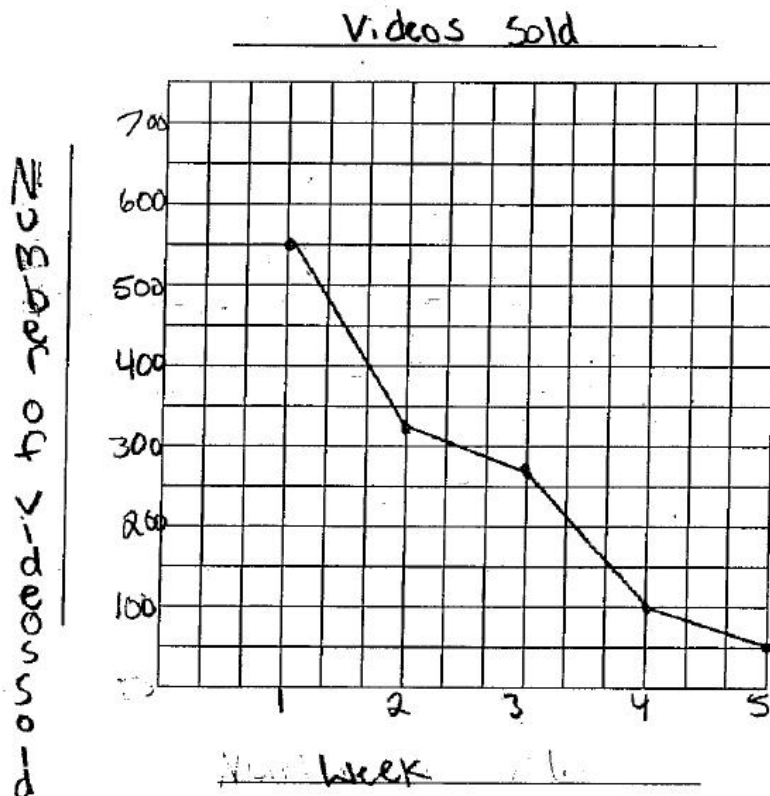
Code
30

The table below shows the weekly video sales at a store over a five-week period.

Videos Sold

Week	1	2	3	4	5
Number of videos sold	550	325	275	100	50

Draw a broken-line graph to represent this data. Show titles and labels on the graph.



Explain why a broken-line graph is the most appropriate graph to represent this data.

because a broken-line graph best represents business data and sales.

Annotation:

Student demonstrates a considerable understanding of the relationships between important elements of the problem; graph drawn accurately; explanation does not support idea of 'change over time'.

Scoring Guide for Junior Mathematics Open-Response
Question 27

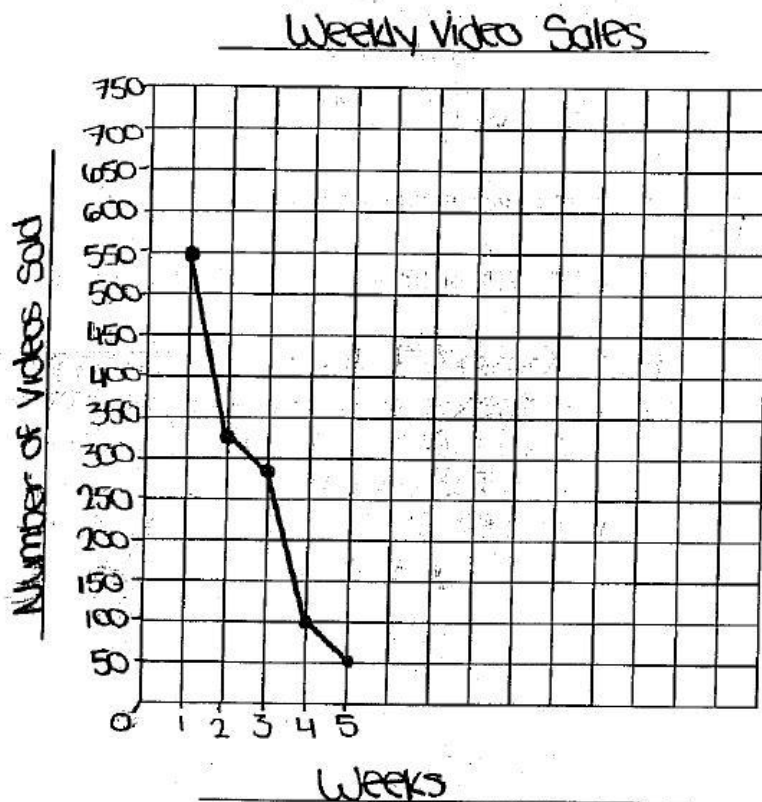
Code
40

The table below shows the weekly video sales at a store over a five-week period.

Videos Sold

Week	1	2	3	4	5
Number of videos sold	550	325	275	100	50

Draw a broken-line graph to represent this data. Show titles and labels on the graph.



Explain why a broken-line graph is the most appropriate graph to represent this data.

A Broken-line graph is the most appropriate graph to represent this data because it actually shows the change over a period of time.

Annotation:

Student demonstrates a thorough understanding of the relationships between all of the important elements of the problem; graph drawn accurately; explanation supports choice of broken line graph to represent change over time.

Scoring Guide for Junior Mathematics Open-Response Question 28

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B	<ul style="list-style-type: none"> Blank: nothing written or drawn in response to the question
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10	<p>Problem-solving process to multiply and divide decimal numbers to calculate the amount of change Carmen should receive shows limited effectiveness due to</p> <ul style="list-style-type: none"> minimal evidence of a solution process limited identification of important elements of the problem too much emphasis on unimportant elements of the problem no conclusions presented conclusion presented without supporting evidence
20	<p>Problem-solving process to multiply and divide decimal numbers to calculate the amount of change Carmen should receive shows some effectiveness due to</p> <ul style="list-style-type: none"> an incomplete solution process identification of some of the important elements of the problem some understanding of the relationships between important elements of the problem simple conclusions with little supporting evidence
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40	<p>Problem-solving process to multiply and divide decimal numbers to calculate the amount of change Carmen should receive shows a high degree of effectiveness due to</p> <ul style="list-style-type: none"> a complete solution process identification of all important elements of the problem a thorough understanding of the relationships between all of the important elements of the problem appropriate conclusions with thorough and insightful supporting evidence

Scoring Guide for Junior Mathematics Open-Response
Question 28

Code
10

Carmen wants to install a fence. Each section of fence is 2.4 metres long and costs \$6.00 per metre. Carmen will need 16 sections of fence. How much change should he receive from \$250?

Show your work.

$$\begin{array}{r} 2.4 \\ \times 6.00 \\ \hline 1.20 \\ + 0.00 \\ \hline 1.20 \\ \hline 1.44 \end{array} = \text{change He would receive is } 1.44 \$$$

Annotation:

Student demonstrates limited identification of important elements of the problem; does not consider 16 or \$250 in solution; multiplies incorrectly and considers what is total length to be amount of change.

**Scoring Guide for Junior Mathematics Open-Response
Question 28**

**Code
20**

Carmen wants to install a fence. Each section of fence is 2.4 metres long and costs \$6.00 per metre. Carmen will need 16 sections of fence. How much change should he receive from \$250?

Show your work.	$ \begin{array}{r} 1.6 \\ \times 6 \\ \hline 9.6 \end{array} $	$ \begin{array}{r} 250.00 \\ - 96.00 \\ \hline 154.00 \end{array} $	He will get the 154.00 back from that he gives the 250.
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Annotation:

Student demonstrates some understanding of the relationships between important elements of the problem; incorrectly determines total cost (misunderstands \$6 as cost per section); accurately determines amount of change based on their total cost.

Scoring Guide for Junior Mathematics Open-Response
Question 28

Code
30

Carmen wants to install a fence. Each section of fence is 2.4 metres long and costs \$6.00 per metre. Carmen will need 16 sections of fence. How much change should he receive from \$250?

Show your work.

$$2.4 \times 16 = 38.4 \text{ m}$$

38.4m is carmens
fence length.

$$38.4 \times 6 = 230.4\$$$

It will cost carmen
230.4\$.

Annotation:

Student demonstrates a solution process that is nearly complete; accurately calculates total length and total cost; does not complete problem by determining amount of change.

Scoring Guide for Junior Mathematics Open-Response
Question 28

Code
40

Carmen wants to install a fence. Each section of fence is 2.4 metres long and costs \$6.00 per metre. Carmen will need 16 sections of fence. How much change should he receive from \$250?

Show your work.

$$\begin{array}{l} 16.0 \text{ selections} \\ \times 2.4 \text{ meters} \\ \hline 38.4 \text{ m} \end{array}$$

$$\begin{array}{r} \$250.00 \\ - \$230.40 \\ \hline \$19.60 \end{array}$$

$$38.4 \times 6 = \$230.40$$

∴ Carmen received \$19.60
change

Annotation:

Student demonstrates a thorough understanding of the relationships between all of the important elements of the problem; accurately calculates total length, total cost, and amount of change.

Scoring Guide for Junior Mathematics Open-Response Question 29

Code	Descriptor
B	<ul style="list-style-type: none"> Blank: nothing written or drawn in response to the question
I	<ul style="list-style-type: none"> Illegible: cannot be read; completely crossed out/erased; not written in English Irrelevant content: does not attempt assigned question (e.g., comment on the task, drawings, “?”, “!”, “I don’t know”) Off topic: no relationship of written work to the question
10	<p>Problem-solving process to compare and represent fractional amounts shows limited effectiveness due to</p> <ul style="list-style-type: none"> minimal evidence of a solution process limited identification of important elements of the problem too much emphasis on unimportant elements of the problem no conclusions presented conclusion presented without supporting evidence
20	<p>Problem-solving process to compare and represent fractional amounts shows some effectiveness due to</p> <ul style="list-style-type: none"> an incomplete solution process identification of some of the important elements of the problem some understanding of the relationships between important elements of the problem simple conclusions with little supporting evidence
30	<p>Problem-solving process to compare and represent fractional amounts shows considerable effectiveness due to</p> <ul style="list-style-type: none"> a solution process that is nearly complete identification of most of the important elements of the problem a considerable understanding of the relationships between important elements of the problem appropriate conclusions with supporting evidence
40	<p>Problem-solving process to compare and represent fractional amounts shows a high degree of effectiveness due to</p> <ul style="list-style-type: none"> a complete solution process identification of all important elements of the problem a thorough understanding of the relationships between all of the important elements of the problem appropriate conclusions with thorough and insightful supporting evidence

Scoring Guide for Junior Mathematics Open-Response
Question 29

Code
10

Consider the fractions $\frac{3}{2}$ and $1\frac{3}{4}$.

- Which of these fractions is larger?

Justify your answer.

I think $1\frac{3}{4}$ is larger because $1\frac{3}{4}$ is bigger number

The larger fraction is $1\frac{3}{4}$.

- Find a fraction between $\frac{3}{2}$ and $1\frac{3}{4}$.

Justify your answer. I think it's $\frac{3}{3}$ because the top numbers are 3.

A fraction between $\frac{3}{2}$ and $1\frac{3}{4}$ is $\frac{3}{3}$.

Annotation:

Student demonstrates limited identification of important elements of the problem; chooses larger fraction with no process shown; chooses an inappropriate fraction between $\frac{3}{2}$ and $1\frac{3}{4}$ with inappropriate justification.

**Scoring Guide for Junior Mathematics Open-Response
Question 29**

**Code
20**

Consider the fractions $\frac{3}{2}$ and $1\frac{3}{4}$.

- Which of these fractions is larger?

Justify your answer.

The fraction that is larger is $1\frac{3}{4}$
because: $2\overline{)3}$ $1\frac{1}{2}$ is smaller
 $\quad -2$ then $1\frac{3}{4}$, or
 $\quad \quad 1$

The larger fraction is $1\frac{3}{4}$.

- Find a fraction between $\frac{3}{2}$ and $1\frac{3}{4}$.

Justify your answer.

$2\overline{)3}$ $1\frac{1}{2}$ and $1\frac{3}{4}$
 $\quad -2$
 $\quad \quad 1$

The number between the
2 is: $1\frac{3}{3}$ because the
numerator is 1 and 3 so it will
= 2 and the denominator is
2 and 4 so it = 3.

A fraction between $\frac{3}{2}$ and $1\frac{3}{4}$ is $1\frac{3}{3}$.

Annotation:

Student demonstrates some understanding of the relationships between important elements of the problem; chooses larger fraction with some process; correctly converts $\frac{3}{2}$ to a mixed fraction; chooses appropriate in between fraction but justification gives evidence of misunderstanding (chooses number between numerators and number between denominators and expresses these as a fraction).

Scoring Guide for Junior Mathematics Open-Response Question 29

Code
30

Consider the fractions $\frac{3}{2}$ and $1\frac{3}{4}$.

- Which of these fractions is larger?

Justify your answer.

I say that $1\frac{3}{4}$ is bigger because both fractions are different fraction. One is improper and the other is mixed fraction. So what I did was I changed $1\frac{3}{4}$ into a improper fraction. Since $\frac{3}{2}$ didn't have same denominator I changed $\frac{3}{2}$ to $\frac{6}{4}$. So $\frac{6}{4}$ is less than $\frac{7}{4}$. There also the mixed fraction. You just convert it: $1\frac{3}{4} = \frac{7}{4}$ and $1\frac{3}{4} = \frac{7}{4}$.

$$\frac{3 \times 2}{2 \times 2} = \frac{6}{4} \quad \frac{1 \times 2}{1 \times 2} = \frac{2}{2} \quad \frac{2 \times 3}{2 \times 4} = \frac{6}{4}$$

The larger fraction is $1\frac{3}{4}$

- Find a fraction between $\frac{3}{2}$ and $1\frac{3}{4}$.

Justify your answer.

I say that $\frac{6.5}{4}$ is the mid way point because between 6 and 7 is 6.5 so the fraction would be $\frac{6.5}{4}$.

A fraction between $\frac{3}{2}$ and $1\frac{3}{4}$ is $\frac{6.5}{4}$

$$\frac{6}{4} \text{ --- } \frac{7}{4} \quad \frac{6.5}{4}$$

Annotation:

Student demonstrates a solution process that is nearly complete; uses common denominator to justify $1\frac{3}{4}$ as being larger; uses common denominators to choose $\frac{6.5}{4}$ but leaves answer in a decimal-fraction form.

Scoring Guide for Junior Mathematics Open-Response Question 29

Code
40

Consider the fractions $\frac{3}{2}$ and $1\frac{3}{4}$.

- Which of these fractions is larger?

Justify your answer.

$\frac{3}{2}$ $1\frac{3}{4}$ ✓

The larger fraction is $1\frac{3}{4}$.

- Find a fraction between $\frac{3}{2}$ and $1\frac{3}{4}$.

Justify your answer.

$\frac{3 \times 3}{2 \times 3}$ $1\frac{3 \times 3}{4 \times 3}$
 $\frac{6 \times 2}{4 \times 2}$ $\frac{7 \times 3}{4 \times 3}$
 $\frac{12}{8}$ $\frac{14}{8}$ $\frac{13}{8}$

A fraction between $\frac{3}{2}$ and $1\frac{3}{4}$ is $\frac{13}{8}$.

Annotation:

Student demonstrates a thorough understanding of the relationships between important elements of the problem; uses diagram with common unit to support choice of $1\frac{3}{4}$; common denominator used to choose fraction between $\frac{3}{2}$ and $1\frac{3}{4}$.

Scoring Guide for Junior Mathematics Open-Response Question 30

Code	Descriptor
B	<ul style="list-style-type: none"> Blank: nothing written or drawn in response to the question
I	<ul style="list-style-type: none"> Illegible: cannot be read; completely crossed out/erased; not written in English Irrelevant content: does not attempt assigned question (e.g., comment on the task, drawings, “?”, “!”, “I don’t know”) Off topic: no relationship of written work to the question
10	<p>Application of knowledge and skills to plot a parallelogram on a grid given points and then perform a rotation counter-clockwise shows limited effectiveness due to</p> <ul style="list-style-type: none"> misunderstanding of concepts incorrect selection or misuse of procedures
20	<p>Application of knowledge and skills to plot a parallelogram on a grid given points and then perform a rotation counter-clockwise shows some effectiveness due to</p> <ul style="list-style-type: none"> partial understanding of the concepts errors and/or omissions in the application of the procedures
30	<p>Application of knowledge and skills to plot a parallelogram on a grid given points and then perform a rotation counter-clockwise shows considerable effectiveness due to</p> <ul style="list-style-type: none"> an understanding of most of the concepts minor errors and/or omissions in the application of the procedures
40	<p>Application of knowledge and skills to plot a parallelogram on a grid given points and then perform a rotation counter-clockwise shows a high degree of effectiveness due to</p> <ul style="list-style-type: none"> a thorough understanding of the concepts an accurate application of the procedures (any minor errors and/or omissions do not detract from the demonstration of a thorough understanding)

Scoring Guide for Junior Mathematics Open-Response
Question 30

Code
10

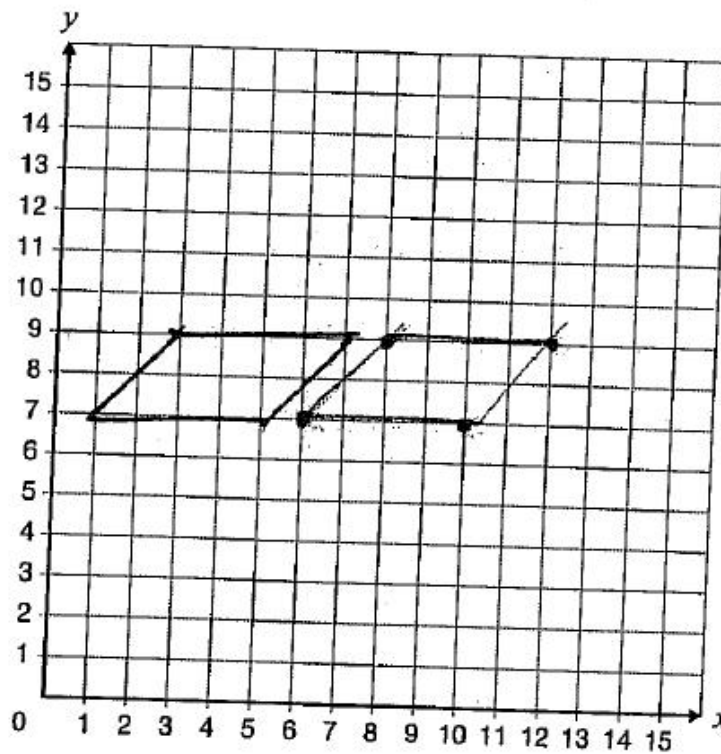
Plot and label the following points to form parallelogram PQRS on the grid below.

P (9, 12)

Q (9, 8)

R (7, 6)

S (7, 10)



Rotate parallelogram PQRS 90° counter-clockwise about point R. Draw the new parallelogram on the grid above.



Annotation:

Student demonstrates a misuse of procedures; plots parallelogram PQRS incorrectly (reverses co-ordinates); all image points are incorrect (image is the result of a translation).

Scoring Guide for Junior Mathematics Open-Response
Question 30

Code
20

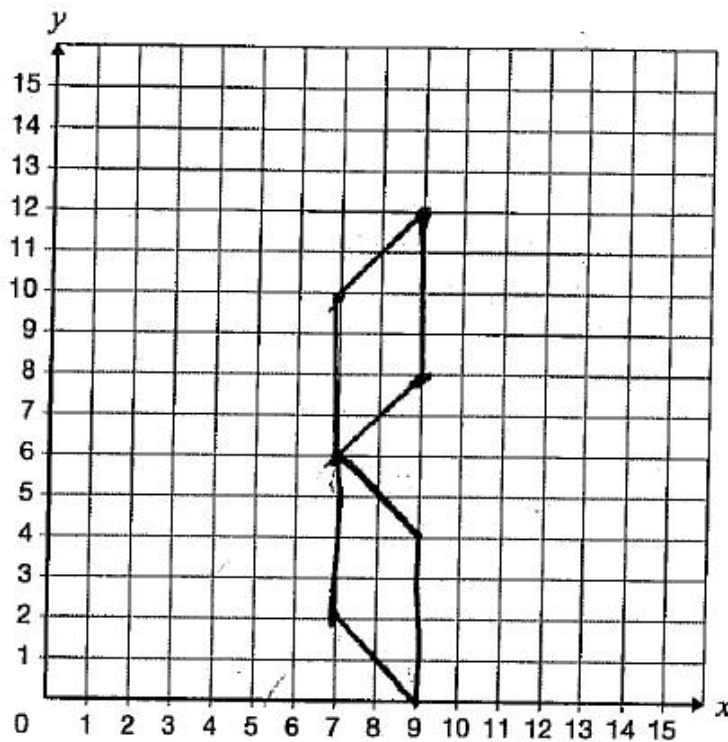
Plot and label the following points to form parallelogram PQRS on the grid below.

P (9, 12)

Q (9, 8)

R (7, 6)

S (7, 10)



Rotate parallelogram PQRS 90° counter-clockwise about point R. Draw the new parallelogram on the grid above.

Annotation:

Student demonstrates a partial understanding of the concepts; plots parallelogram PQRS correctly; image points P, Q and S are incorrect.

Scoring Guide for Junior Mathematics Open-Response
Question 30

Code
30

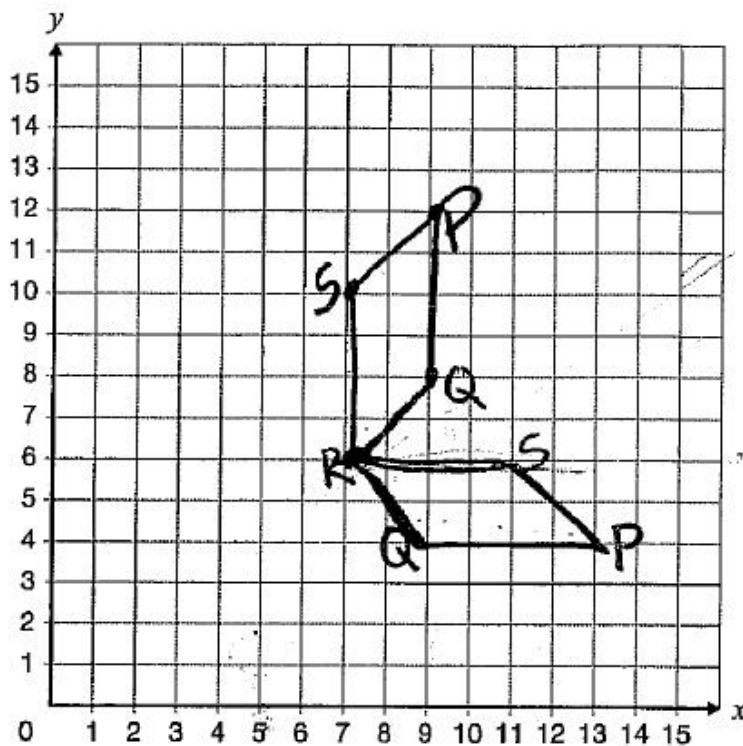
Plot and label the following points to form parallelogram PQRS on the grid below.

P (9, 12)

Q (9, 8)

R (7, 6)

S (7, 10)



Rotate parallelogram PQRS 90° counter-clockwise about point R. Draw the new parallelogram on the grid above.

Annotation:

Student demonstrates an understanding of most of the concepts; plots parallelogram PQRS correctly; image is result of a 90° clockwise rotation.

Scoring Guide for Junior Mathematics Open-Response
Question 30

Code
40

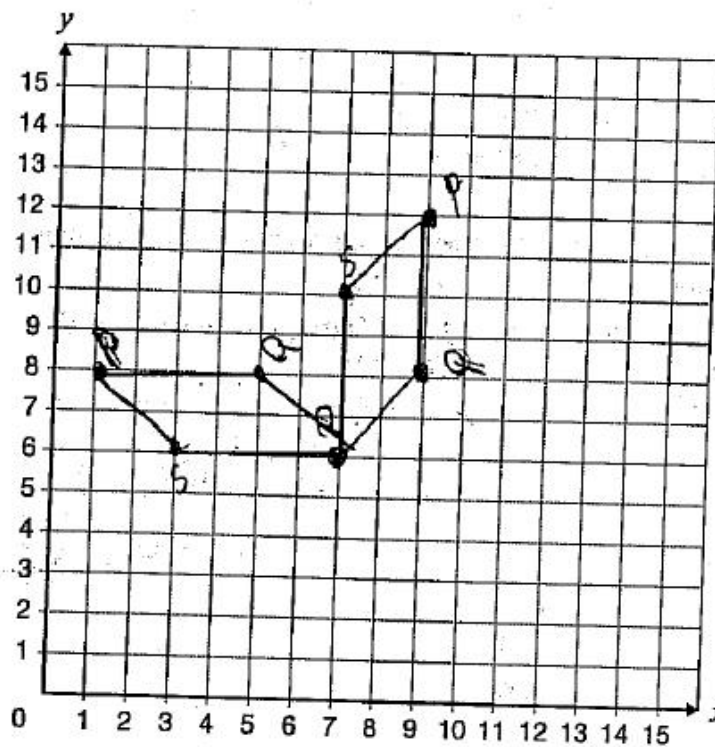
Plot and label the following points to form parallelogram PQRS on the grid below.

P (9, 12)

Q (9, 8)

R (7, 6)

S (7, 10)



Rotate parallelogram PQRS 90° counter-clockwise about point R. Draw the new parallelogram on the grid above.

Annotation:

Student demonstrates an accurate application of the procedures; plots and rotates parallelogram PQRS correctly.