EQAO

**Education
Quality and
Accountability
Office**

Grade 6 Assessment of Reading, Writing and Mathematics, Spring 2006

Student Booklet: Mathematics

Scoring Guide

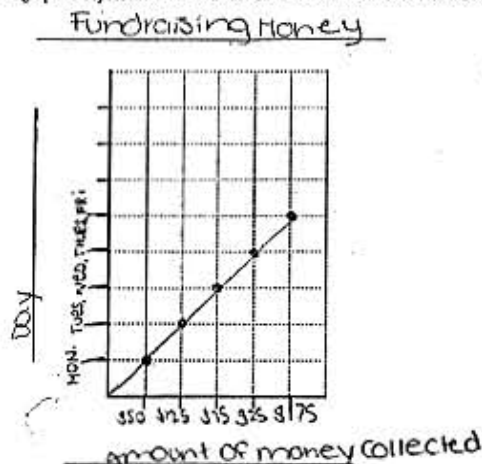| Code	Description
B	Blank – nothing written or drawn in response
I	Illegible, Irrelevant, Off Topic
10	Application of knowledge and skills of displaying data in a broken-line graph using an appropriate scale shows limited effectiveness due to: • misunderstanding of concepts • incorrect selection or misuse of procedures.
20	Application of knowledge and skills of displaying data in a broken-line graph using an appropriate scale shows some effectiveness due to: • a partial understanding of concepts • errors and/or omissions in the application of procedures.
30	Application of knowledge and skills of displaying data in a broken-line graph using an appropriate scale shows considerable effectiveness due to: • an understanding of most concepts • minor errors and/or omissions in the application of the procedures.
40	Application of knowledge and skills of displaying data in a broken-line graph using an appropriate scale shows a high degree of effectiveness due to: • a thorough understanding of the concepts • an accurate application of the procedures. (minor errors do not detract from a thorough understanding).

Question 27 — Code 10

Ranjit makes the chart below to record the amount of money collected during a fundraising event.

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Amount of Money Collected	$50	$125	$75	$25	$175

Make a broken-line graph to represent the data. Remember to include all titles and labels.

Fundraising Money

Day (MON., TUES., WED., THURS., FRI.)

amount of money collected

350 125 175 325 3175

Explain your choice of scale.

I chose this because I did each day of the week on the vertical axis and matched it up with the amount of $ raised for each day. I connected it with a dot.

Rationale :
- Misunderstanding of concepts
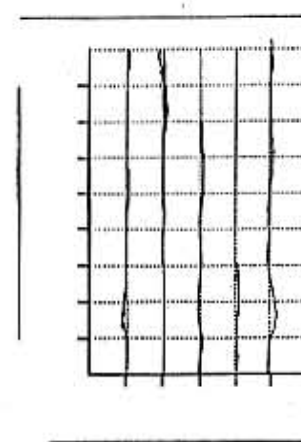- Misuse of procedures- inaccurate representation of the data

Question 27 — Code 10

Ranjit makes the chart below to record the amount of money collected during a fundraising event.

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Amount of Money Collected	$50	$125	$75	$25	$175

Make a broken-line graph to represent the data. Remember to include all titles and labels.

Explain your choice of scale.

My choice of scale is lines

Rationale :
- Misunderstanding of concepts
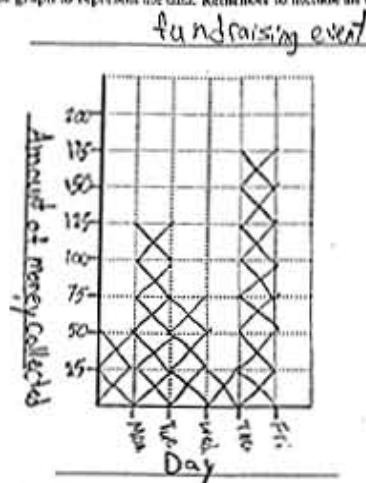- Misuse of procedures- inaccurate representation of a broken line graph

Question 27   Code 20

Ranjit makes the chart below to record the amount of money collected during a fundraising event.

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Amount of Money Collected	$50	$125	$75	$25	$175

Make a broken-line graph to represent the data. Remember to include all titles and labels.

fundraising event

Explain your choice of scale.

I chose my titles by the ones given, and chose the numbers that I counted by-by revuing 25 times table and noticed that all the amounts of mony given were there!

Rationale :
- Demonstrates a partial understanding of concepts
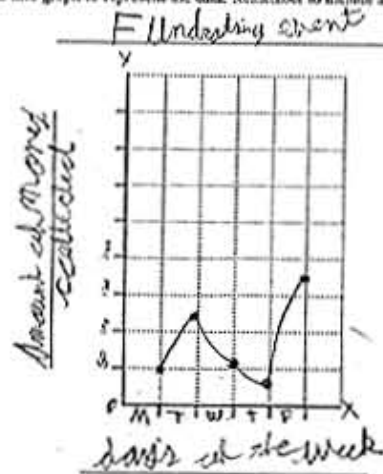- Errors in the application of the procedures- display data using a bar graph

Question 27   Code 20

Ranjit makes the chart below to record the amount of money collected during a fundraising event.

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Amount of Money Collected	$50	$125	$75	$25	$175

Make a broken-line graph to represent the data. Remember to include all titles and labels.

Fundraising event

days of the week

Explain your choice of scale. My chose the scale is Te fing graph because it is the most sadible for money grapha.

Rationale :
- Demonstrates a partial understanding of concepts
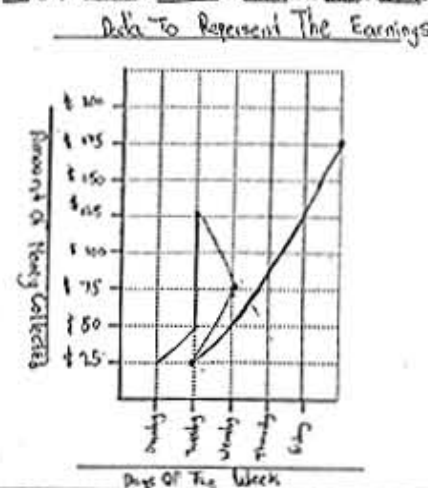- Selected a scale that would require estimation

Question 27   Code 20

Ranjit makes the chart below to record the amount of money collected during a fundraising event.

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Amount of Money Collected	$50	$125	$75	$25	$175

Make a broken-line graph to represent the data. Remember to include all titles and labels.

Data To Represent The Earnings

Days Of The Week

Explain your choice of scale. When I chose my choice of scale I first looked at the title on the top & saw the data and the title earnings that I looked at the mony amount again to see how much it shall go up by and is it suitable. Next I looked at the days which are listed above the earning then I place it at the bottom

Rationale :
- Demonstrates a partial understanding of concepts
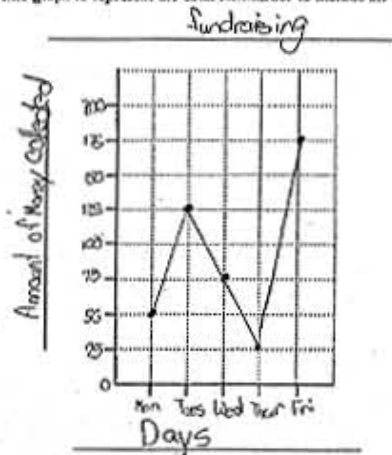- Inaccurate plotting and joining of points

Question 27 — Code 30

Ranjit makes the chart below to record the amount of money collected during a fundraising event.

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Amount of Money Collected	$50	$125	$75	$25	$175

Make a broken-line graph to represent the data. Remember to include all titles and labels.

Fundraising

Explain your choice of scale.

I started with 25 because their are all multiples of 25.

Rationale :
- Application of knowledge and skills of displaying data in a broken-line graph using an appropriate scale shows considerable effectiveness
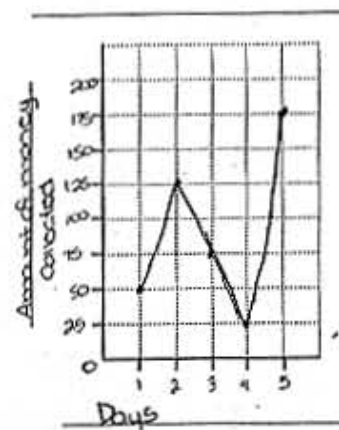- Explanation for choice of scale does not mention the range

Question 27 — Code 30

Ranjit makes the chart below to record the amount of money collected during a fundraising event.

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Amount of Money Collected	$50	$125	$75	$25	$175

Make a broken-line graph to represent the data. Remember to include all titles and labels.

Days

Explain your choice of scale.

I picked it because if I use 20 it would be too low so I thats why I picked it.

Rationale :
- Demonstrates an understanding of most concepts
- Minor errors and omissions in the application of the procedures- title is missing and the explanation for choice of scale does not mention the range
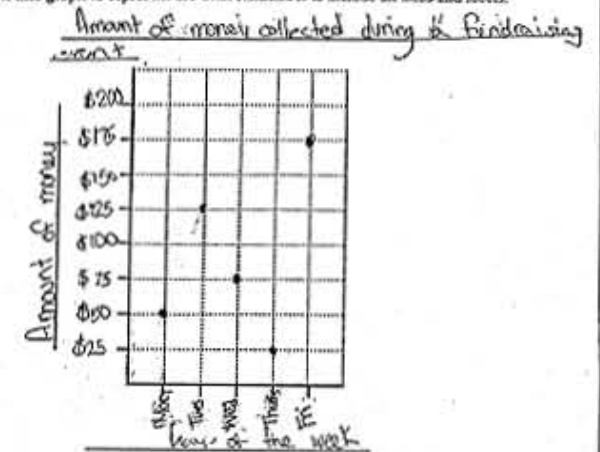
Question 27 — Code 30

Ranjit makes the chart below to record the amount of money collected during a fundraising event.

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Amount of Money Collected	$50	$125	$75	$25	$175

Make a broken-line graph to represent the data. Remember to include all titles and labels.

Amount of money collected during a fundraising event

Explain your choice of scale.

I chose 25, because all of the numbers are a multipul of 25.

Rationale :
- Demonstrates an understanding of most concepts
- Minor errors and omissions in the application of the procedures- points are not connected and the explanation for choice of scale does not mention the range

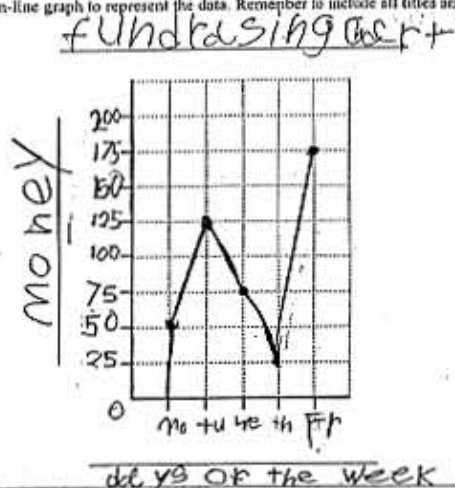| Code	Description
B	Blank – nothing written or drawn in response
I	Illegible, Irrelevant, Off Topic
10	Application of knowledge and skills of displaying data in a broken-line graph using an appropriate scale shows limited effectiveness due to • misunderstanding of concepts • incorrect selection or misuse of procedures.
20	Application of knowledge and skills of displaying data in a broken-line graph using an appropriate scale shows some effectiveness due to • a partial understanding of concepts • errors and/or omissions in the application of procedures.
30	Application of knowledge and skills of displaying data in a broken-line graph using an appropriate scale shows considerable effectiveness due to • an understanding of most concepts • minor errors and/or omissions in the application of the procedures.
40	Application of knowledge and skills of displaying data in a broken-line graph using an appropriate scale shows a high degree of effectiveness due to • a thorough understanding of the concepts • an accurate application of the procedures. (minor errors do not detract from a thorough understanding).

Question 27 — Code 40

Ranjit makes the chart below to record the amount of money collected during a fundraising event.

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Amount of Money Collected	$50	$125	$75	$25	$175

Make a broken-line graph to represent the data. Remember to include all titles and labels.

fundrasing chart

Explain your choice of scale.

I think it is more Convenient because if the amounts of money rang between 25 and 175 if I count up by 25 I get to 75 in 7 numbers and that's as many numbers I need.

Rationale :
• Demonstrates a thorough understanding of the concepts
• Accurate application of the procedures- broken-line graph is completed accurately and the explanation for the choice of scale is appropriate
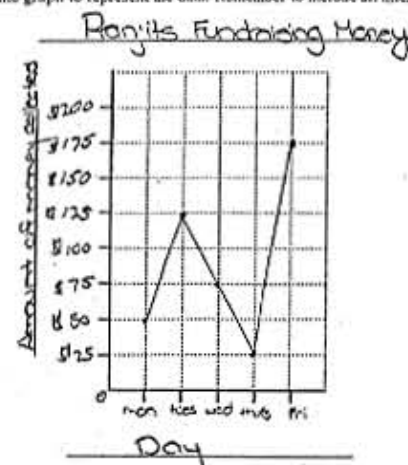
Question 27 — Code 40

Ranjit makes the chart below to record the amount of money collected during a fundraising event.

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Amount of Money Collected	$50	$125	$75	$25	$175

Make a broken-line graph to represent the data. Remember to include all titles and labels.

Ranjits Fundraising Money

Explain your choice of scale.

The reason why I chose to list my numbers on the graph by 25's was because since all of the numbers were multiples of 25 that would be the easiest way for me to list the data that way. So if I listed the the data by 5 because they are all multiples of 5 then the numbers would be off the graph.

Rationale :
• Demonstrates a thorough understanding of the concepts
• Accurate application of the procedures- broken-line graph is completed accurately and the explanation for the choice of scale is appropriate

Code	Description
B	Blank – nothing written or drawn in response
I	Illegible, Irrelevant, Off Topic
10	Problem-solving process of applying patterning strategies shows limited effectiveness due to • minimal evidence of a solution process • limited identification of important elements of the problem • too much emphasis on unimportant elements • no conclusions presented • conclusion presented without supporting evidence
20	Problem-solving process of applying patterning strategies shows some effectiveness due to • 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	Problem-solving process of applying patterning strategies shows considerable effectiveness due to • 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	Problem-solving process of applying patterning strategies shows a high degree of effectiveness due to • 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 (i.e. determines an equal step height of 16.5 cm and accurately calculates the missing steps as 16.5 cm, 33 cm and 49.5 cm)

Question 28   Code 10

A carpenter is replacing some missing steps at the front of Dena's house. The bottom three steps are missing. He wants to use the same heights for the new steps as the old steps. The carpenter measures the height from the ground to the top of each remaining step.

- The fourth step is 66 cm from the ground.
- The fifth step is 82.5 cm from the ground.
- The sixth step is 99 cm from the ground.

The carpenter plans to make each step increase by the same amount.

What are the heights of the first, second and third steps?
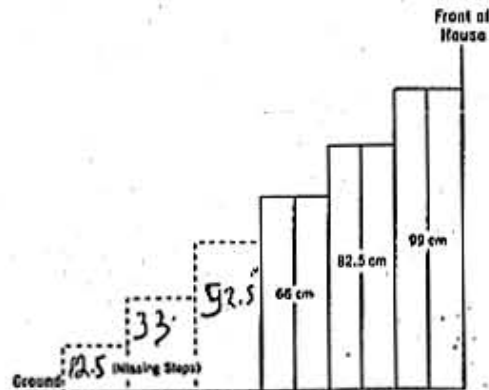
Show or explain your work.

The carpenter plan is wrong because he did not make all of the stairs incrase by the same height.

Rationale :
- Conclusion presented without supporting evidence
- No evidence of where 26, 33, 53 came from

Question 28   Code 10

A carpenter is replacing some missing steps at the front of Dena's house. The bottom three steps are missing. He wants to use the same heights for the new steps as the old steps. The carpenter measures the height from the ground to the top of each remaining step.

- The fourth step is 66 cm from the ground.
- The fifth step is 82.5 cm from the ground.
- The sixth step is 99 cm from the ground.

The carpenter plans to make each step increase by the same amount.

What are the heights of the first, second and third steps?
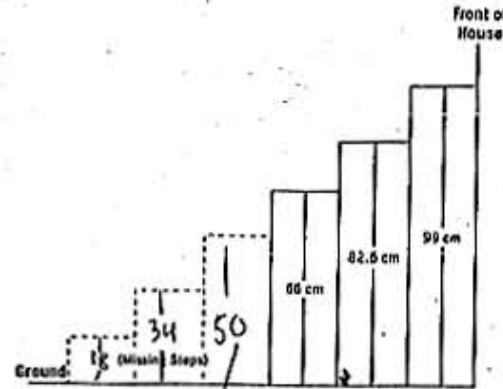
Show or explain your work.

I measared the First Three Steps to see what the hight was

Rationale :
- Although the answers are in ascending order (20, 25, 40) there is no evidence of a solution process
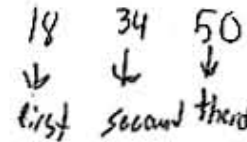- Conclusion presented without supporting evidence

Question 28 — Code 20

The carpenter plans to make each step increase by the same amount.
What are the heights of the first, second and third steps?

Show or explain your work.

First step: 12.5cm

Second step: 33cm

Third step: 52.5cm

You have to find the pattern from 66 you go to 52.5cm to 33cm to 12.5cm

Rationale:
- Incomplete solution process
- Identification of some of the important elements of the problem- ascending order and a "pattern"
- Has a simple conclusion with little supporting evidence

Question 28 — Code 20

The carpenter plans to make each step increase by the same amount.
What are the heights of the first, second and third steps?

Show or explain your work.

18   34   50
↓   ↓   ↓
first second third

I added 16 to each number.

Rationale:
- Incomplete solution process
- Identification of some of the important elements of the problem- ascending order, "added 16 to each number"
- No evidence of where the 16 came from

Question 28 — Code 20

The carpenter plans to make each step increase by the same amount.
What are the heights of the first, second and third steps?

Show or explain your work.

The difference between each step is 16.5.

66cm   82.5cm
-82.5cm 99cm
16.5   16.5

Rationale:
- Incomplete solution process
- Identification of some of the important elements of the problem- difference being 16.5 m for each step
- Did not use the difference to calculate the height of the other 2 stairs

Question 28 — Code 30

.A carpenter is replacing some missing steps at the front of Dena's house. The bottom three steps are missing. He wants to use the same heights for the new steps as the old steps. The carpenter measures the height from the ground to the top of each remaining step.

- The fourth step is 66 cm from the ground.
- The fifth step is 82.5 cm from the ground.
- The sixth step is 99 cm from the ground.

Front of House

82.5 cm

99 cm

66 cm

H9.5

33

Ground 16.5 (Missing Steps)
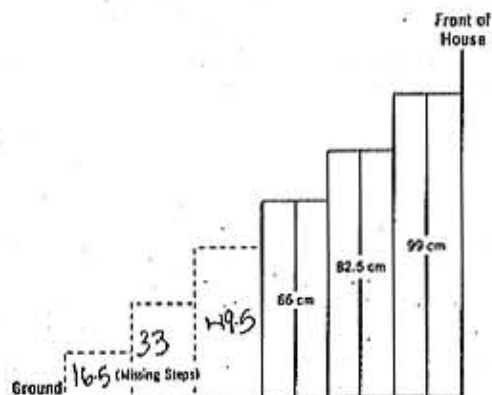
The carpenter plans to make each step increase by the same amount.
What are the heights of the first, second and third steps?

Show or explain your work.

$66 - 16.5 = 49.5$ / $49.5 - 16.5 = 33$ / $33 - 16.5 = 16.5$

Rationale :
- Solution process that is nearly complete- does not show where 16.5 comes from
- Appropriate conclusions with supporting evidence

Question 28 — Code 30

The carpenter plans to make each step increase by the same amount.
What are the heights of the first, second and third steps?

Show or explain your work.

$16.5 + 16.5 = 33$

1st step = 33cm

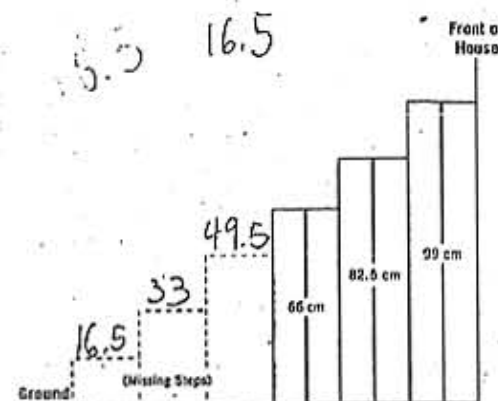2nd step = 49.5cm

3rd step = 66cm

$33 + 16.5 = 49.5$

$49.5 + 16.5 = 66$

Rationale :
- A solution process that is nearly complete- does not identify first step
- Considerable understanding of the relationships between important elements of the problem

Question 28 — Code 30

16.5   16.5   Front of House

49.5

33

82.5 cm   99 cm

66 cm

16.5

Ground   (Missing Steps)

The carpenter plans to make each step increase by the same amount.
What are the heights of the first, second and third steps?

Show or explain your work.

The first step is 16.5cm.
The second step is 33cm.
The third step is 49.5 cm.
Each step goes up by 16.5cm each time.

Rationale :
- Solution process that is nearly complete- does not show where 16.5 comes from
- Appropriate conclusions with supporting evidence

Code	Description
B	Blank – nothing written or drawn in response
I	Illegible, Irrelevant, Off Topic
10	Problem-solving process of applying patterning strategies shows limited effectiveness due to • minimal evidence of a solution process • limited identification of important elements of the problem • too much emphasis on unimportant elements • no conclusions presented • conclusion presented without supporting evidence
20	Problem-solving process of applying patterning strategies shows some effectiveness due to • 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	Problem-solving process of applying patterning strategies shows considerable effectiveness due to • 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	Problem-solving process of applying patterning strategies shows a high degree of effectiveness due to • 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 (i.e. determines an equal step height of 16.5 cm and accurately calculates the missing steps as 16.5 cm, 33 cm and 49.5 cm)

Question 28 — Code 40

The carpenter plans to make each step increase by the same amount.
What are the heights of the first, second and third steps?

Show or explain your work.

$$99 - 82.5 = 16.5$$
$$82.5 - 66 = 16.5$$
$$66 - 16.5 = 49.5$$
$$49.5 - 16.5 = 33$$
$$33 - 16.5 = 16.5$$

The height of the first is 16.5cm from the ground. The second step is 33cm from the ground. The third step is 49.5cm. from the ground.

Rationale :
• Shows a complete solution process
• Identifies all important elements
• Appropriate solution with complete (thorough) and well organized (insightful) supporting evidence

Question 28 — Code 40

The carpenter plans to make each step increase by the same amount.
What are the heights of the first, second and third steps?

Show or explain your work.

$$99.0\,cm - 82.5\,cm = 16.5\,cm$$
$$66\,cm - 16.5\,cm = 49.5\,cm$$
$$49.5\,cm - 16.5\,cm = 33.0\,cm$$
$$33.0\,cm - 16.5\,cm = 16.5\,cm$$

Step 3 is 49.5 cm   Step 2 is 33.0 cm   Step 1 is 16.5 cm.

Rationale :
• Shows a complete solution process
• A thorough understanding of the relationships between all of the important elements of the problem
• Well organized and thorough supporting evidence

Code	Description
B	Blank – nothing written or drawn in response
I	Illegible, Irrelevant, Off Topic
10	Problem-solving process to use and verify estimation strategies shows limited effectiveness due to • minimal evidence of a solution process • limited identification of important elements of the problem • too much emphasis on unimportant • no conclusions presented • conclusion presented without supporting evidence
20	Problem-solving process to use and verify estimation strategies shows some effectiveness due to • 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	Problem-solving process to use and verify estimation strategies shows considerable effectiveness due to • 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	Problem-solving process to use and verify estimation strategies shows a high degree of effectiveness due to • 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 (i.e. uses an appropriate strategy to determine that 5 cans will be needed $3 \times 36 = 108$ m^2, $108 / 25 = 4$ r 8, 5 cans needed)

Question 29 — Code 10

The rectangular ceiling of a room has an area of 36 m². The ceiling needs 3 coats of paint. Each can of paint covers 25 m².

About how many cans of paint are needed to paint the ceiling?

Explain your thinking.

___4___ cans of paint are needed.

Rationale :
• Conclusion presented without supporting evidence

Question 29 — Code 10

The rectangular ceiling of a room has an area of 36 m². The ceiling needs 3 coats of paint. Each can of paint covers 25 m².

About how many cans of paint are needed to paint the ceiling?

Explain your thinking.

I divide 3√36. The Answer was 12 so I put m3.

___12___ cans of paint are needed.

Rationale :
• Minimal evidence of a solution process
• Limited identification of important elements of the problem

26

Question 29 — Code 20

.The rectangular ceiling of a room has an area of 36 m². The ceiling needs 3 coats of paint. Each can of paint covers 25 m².

About how many cans of paint are needed to paint the ceiling?

Explain your thinking.

$$\begin{array}{r} 25 \\ +25 \\ \hline 50 \end{array}$$

$$50\overline{\smash{)}\,36\ \ }$$ (with 50, 36, 14 shown)

$$\begin{array}{r} 4\,50 \\ 36 \\ \hline 14 \end{array}$$

__2__ cans of paint are needed.

Rationale:
- An incomplete solution process- states correctly how many cans would be required for one coat of paint

---

Question 29 — Code 20

.The rectangular ceiling of a room has an area of 36 m². The ceiling needs 3 coats of paint. Each can of paint covers 25 m².

About how many cans of paint are needed to paint the ceiling?

Explain your thinking.

$$\begin{array}{r} 36\,m^2 \ \ (\text{area of ceiling}) \\ -25\,m^2 \ \ (\text{area per can of paint}) \\ \hline 11\,m^2 \ \ \text{covered} \end{array}$$

$1\frac{2}{5}$ cans [Paint] ~1 [can]

__~2__ cans of paint are needed.

.e m² m²

Rationale:
- Incomplete solution process- deals with 1 coat of paint

Question 29 — Code 20

The rectangular ceiling of a room has an area of 36 m². The ceiling needs 3 coats of paint. Each can of paint covers 25 m².

About how many cans of paint are needed to paint the ceiling?

Explain your thinking.

because 36 is ‌ than 25 you need extra paint for that little bit extra.

$$25\overline{\smash{)}\,36}$$

$$\begin{array}{r} 36 \\ -25 \\ \hline 11 \end{array}$$

$$\begin{array}{r} 1.11 \\ \times\ 3 \\ \hline 43 \end{array}$$

__43__ cans of paint are needed.

Rationale:
- Some understanding of the relationship between the important elements of the problem- first deals with 1 coat of paint, multiplies incorrectly by 3

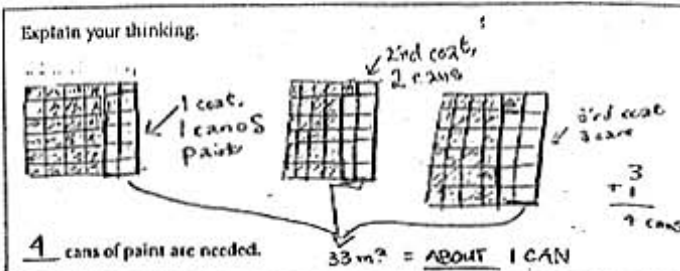| Question 29 | Code 30 | Question 29 | Code 30 | Question 29 | Code 30 |

The rectangular ceiling of a room has an area of 36 m². The ceiling needs 3 coats of paint. Each can of paint covers 25 m².

About how many cans of paint are needed to paint the ceiling?

Explain your thinking.

I multiplied 36 m² by 3 and got 108. Then divided 108 by 25 and got 4.32.

25⟌108

4.32 cans of paint are needed.

The rectangular ceiling of a room has an area of 36 m². The ceiling needs 3 coats of paint. Each can of paint covers 25 m².

About how many cans of paint are needed to paint the ceiling?

Explain your thinking.

$$\begin{array}{r} 36 \\ \times\ 3 \\ \hline 108 \end{array}$$

25⟌108
−100
8

4 cans of paint are needed.

The rectangular ceiling of a room has an area of 36 m². The ceiling needs 3 coats of paint. Each can of paint covers 25 m².

About how many cans of paint are needed to paint the ceiling?

Explain your thinking.

4 cans of paint are needed.

33 m² = ABOUT 1 CAN

Rationale :

- A solution process that is nearly complete- states that 4.32 cans of paint are required, does not round up to 5

Rationale :

- A solution process that is nearly complete- does not complete division

Rationale :

- A solution process that is nearly complete

Code	Description
B	Blank – nothing written or drawn in response
I	Illegible, Irrelevant, Off Topic
10	Problem-solving process to use and verify estimation strategies shows limited effectiveness due to • minimal evidence of a solution process • limited identification of important elements of the problem • too much emphasis on unimportant • no conclusions presented • conclusion presented without supporting evidence
20	Problem-solving process to use and verify estimation strategies shows some effectiveness due to • 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	Problem-solving process to use and verify estimation strategies shows considerable effectiveness due to • 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	Problem-solving process to use and verify estimation strategies shows a high degree of effectiveness due to • 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 (i.e. uses an appropriate strategy to determine that 5 cans will be needed 3 x 36 = 108 m², 108 / 25 = 4 r 8, 5 cans needed)

Question 29 — Code 40

.The rectangular ceiling of a room has an area of 36 m². The ceiling needs 3 coats of paint. Each can of paint covers 25 m².

About how many cans of paint are needed to paint the ceiling?

Explain your thinking. I think 6 because 3 36's add s up to 108 and 125 or 5 cans is the closest f can gch

5 cans of paint are needed.

Rationale :
- Identification of all important elements of the problem
- A complete solution process

Question 29 — Code 40

.The rectangular ceiling of a room has an area of 36 m². The ceiling needs 3 coats of paint. Each can of paint covers 25 m².

About how many cans of paint are needed to paint the ceiling?

Explain your thinking.

5 cans of paint are needed.

Rationale :
- A complete solution process

Code	Description
B	Blank – nothing written or drawn in response
I	Illegible, Irrelevant, Off Topic
10	Application of knowledge and skills of transformational geometry shows limited effectiveness due to • misunderstanding of concepts • incorrect selection or misuse of procedures
20	Application of knowledge and skills of transformational geometry shows some effectiveness due • a partial understanding of concepts • errors and/or omissions in the application of procedures
30	Application of knowledge and skills of transformational geometry shows considerable effectiveness due to • an understanding of most concepts • minor errors and/or omissions in the application of the procedures
40	Application of knowledge and skills of transformational geometry shows a high degree of effectiveness due to • a thorough understanding of the concepts • an accurate application of the procedures • i.e. shows and explains with accurate detail two transformations of triangle MNP (minor errors do not detract from a thorough understanding)

Question 30   Code 10

. Use two transformations of different types to move the triangle on the grid below to a new position. Show both transformations and label M, N and P on the new figure.

Explain your two transformations, using the correct name for each transformation.

> I slide the shape counter clockwise 4 times.

Rationale :
- A misunderstanding of concepts by using the term "slide" instead of "turn" or "rotation"
- The procedures are incorrect, only one type of transformation shown

Question 30   Code 10

. Use two transformations of different types to move the triangle on the grid below to a new position. Show both transformations and label M, N and P on the new figure.

Explain your two transformations, using the correct name for each transformation.

> moved ∠MNPS one unit down and five units to the side.

Rationale :
- Misunderstanding of concepts- the explanation of the two transformations does not match what is shown in the diagram and correct terms have not been used

30

Question 30   Code 20

. Use two transformations of different types to move the triangle on the grid below to a new position. Show both transformations and label M, N and P on the new figure.
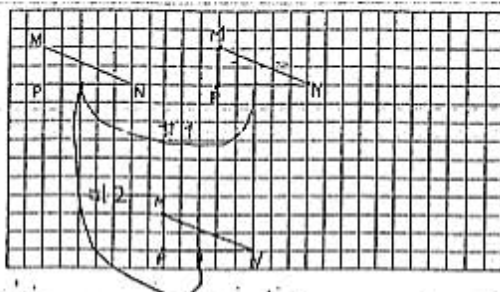
Explain your two transformations, using the correct name for each transformation.

For my first transformation ol moved triangle MPN. 10 boxes/units to the right. For my second transformation ol moved triangle MPN. 9 boxes/units down and 7 boxes/units to the right.
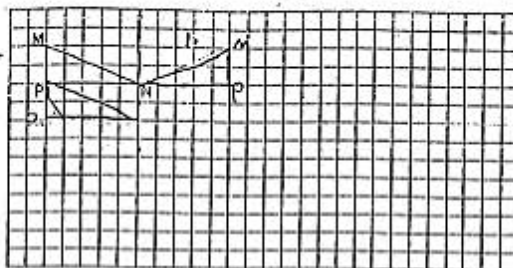
Rationale :
- Some omissions in the application of the procedures, only one type of transformation used
- Partial understanding of concepts, correct terminology not used

Question 30   Code 20

. Use two transformations of different types to move the triangle on the grid below to a new position. Show both transformations and label M, N and P on the new figure.

Explain your two transformations, using the correct name for each transformation.

Flip the triangle for the first one. Then slide the triangle down once for the second one.
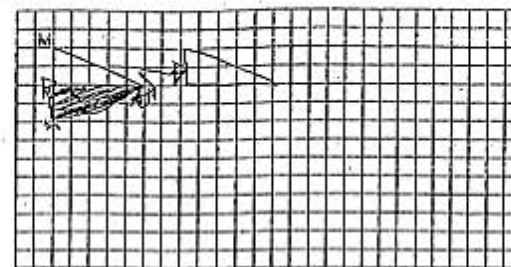
Rationale :
- Partial understanding of the concepts, correct terminology not used
- The translation is not effectively described, "slide the triangle down once", while the diagram indicates a translation of the figure 2 units down

Question 30   Code 20

. Use two transformations of different types to move the triangle on the grid below to a new position. Show both transformations and label M, N and P on the new figure.

Explain your two transformations, using the correct name for each transformation.

this is a flip.
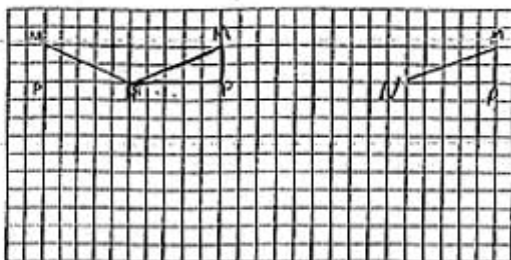this is a slide

Rationale :
- Partial understanding of the concepts- did not use the correct terminology

Question 30   Code 30

. Use two transformations of different types to move the triangle on the grid below to a new position. Show both transformations and label M, N and P on the new figure.

Explain your two transformations, using the correct name for each transformation.

> First it refleded to the right. Then it trarslateð 15 units to the right.
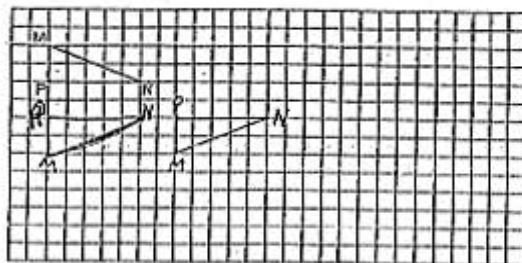
Rationale :
- Minor omission in the application of the procedures- no line of reflection indicated
- Uses terminology "reflected" and "translated"

Question 30   Code 30

. Use two transformations of different types to move the triangle on the grid below to a new position. Show both transformations and label M, N and P on the new figure.

Explain your two transformations, using the correct name for each transformation.

> First I Relleted the O's image the got NI the I translated it (NI) 7 to the Right to get N2.
>
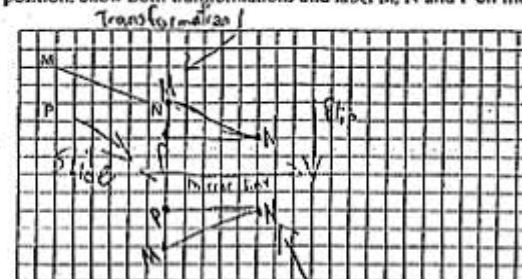> O= orgin   NI=New image I   N2= New image 2

Rationale :
- Minor omission in the application of the procedures- no line of reflection indicated
- Uses terminology "reflected" and "translated"

Question 30   Code 30

. Use two transformations of different types to move the triangle on the grid below to a new position. Show both transformations and label M, N and P on the new figure.

Explain your two transformations, using the correct name for each transformation.

> The first tranformation will be a slide Right 6 and down 2.
> The second tramfonation will be a flip gan down vertical over the mirron line.

Rationale :
- Demonstrates an understanding of most of the concepts using two different transformations and indicating the "mirror line".
- Did not use the correct terminology- "flip" rather than "reflection", "slide" rather than "translation"

Code	Description
B	Blank – nothing written or drawn in response
I	Illegible, Irrelevant, Off Topic
10	Application of knowledge and skills of transformational geometry shows limited effectiveness due to • misunderstanding of concepts • incorrect selection or misuse of procedures
20	Application of knowledge and skills of transformational geometry shows some effectiveness due • a partial understanding of concepts • errors and/or omissions in the application of procedures
30	Application of knowledge and skills of transformational geometry shows considerable effectiveness due to • an understanding of most concepts • minor errors and/or omissions in the application of the procedures
40	Application of knowledge and skills of transformational geometry shows a high degree of effectiveness due to • a thorough understanding of the concepts • an accurate application of the procedures • i.e. shows and explains with accurate detail two transformations of triangle MNP (minor errors do not detract from a thorough understanding)

Question 30   **Code 40**

Use two transformations of different types to move the triangle on the grid below to a new position. Show both transformations and label M, N and P on the new figure.

Explain your two transformations, using the correct name for each transformation.

I translated the figure 8 units to the right and 4 units down.
Then I rotated the figure ½ a turn to its image.

Rationale :
• Shows and explains with accurate detail two consecutive transformations using correct terminology
• Indicates the rotation point on diagram

Question 30   **Code 40**

Use two transformations of different types to move the triangle on the grid below to a new position. Show both transformations and label M, N and P on the new figure.

Explain your two transformations, using the correct name for each transformation.

1) I did a vertical flip (reflection)
2) I translated (slid) the shape 8 units right and 2 units down

Rationale :
• Shows and explains with accurate detail two transformations using correct terminology
• The fact that they are not consecutive transformations is a 'minor' error

33