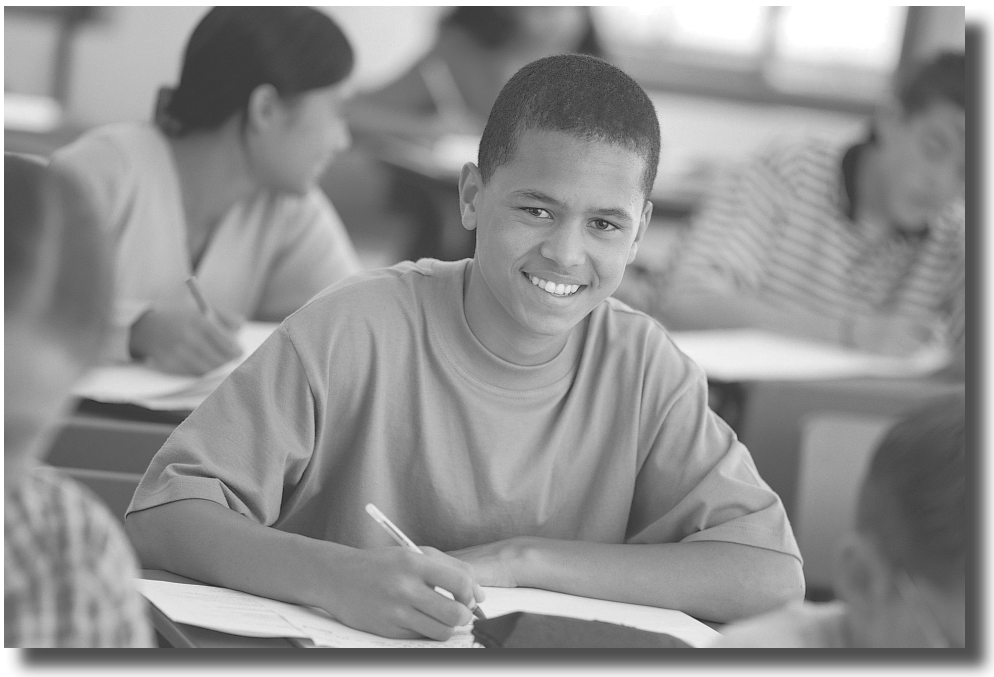
The Pennsylvania System of School Assessment

Mathematics
Item and Scoring Sampler



2008–2009
Grade 5

Pennsylvania Department of Education Bureau of Assessment and Accountability 2008–2009

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MATHEMATICS

INTRODUCTION

General Introduction

The Department of Education provides districts and schools with tools to assist in delivering focused instructional programs aligned to the state assessment system. These tools include assessment anchor documents, assessment handbooks, and content-based item and scoring samplers. This 2008–2009 Mathematics Item and Scoring Sampler is a useful tool for Pennsylvania educators in the preparation of local instructional programs and the statewide PSSA.

What Is Included

The 2008–2009 Mathematics Item and Scoring Samplers do not contain newly released items. The samplers are a compilation of previously released items. This item and scoring sampler contains mathematics multiple-choice items and open-ended items that have been written to align to the 2008 Assessment Anchor Content Standards (Assessment Anchors). Some of the items are actual items used to assess student performance on the PSSA. They provide an idea of the types of items that will appear on the operational Spring 2009 PSSA. Each item has been through a rigorous review process to ensure alignment with the Assessment Anchors.

Purpose and Uses

The items in this sampler may be used as examples for creating assessment items at the classroom level, and they may also be copied and used as part of a local instructional program.* Classroom teachers may find it beneficial to have students respond to the open-ended items in this sampler. Educators can then use the sampler as a guide to score the responses either independently or together with colleagues within a school or district.

Item Format and Scoring Guidelines

The multiple-choice items have four answer choices. Each correct response to a multiple-choice item is worth one point.

Each open-ended item is designed to take about ten minutes to complete. During an official testing administration, students are given additional time as necessary to complete the test items. Each open-ended item in mathematics is scored using an item-specific scoring guideline based on a 0–4 point scale. In this sampler, every item-specific scoring guideline is combined with examples of student responses representing each score point to form a practical item-specific scoring guide.

The sampler also includes the General Description of Mathematics Scoring Guidelines used to develop the item-specific guidelines and guides. These General Description Scoring Guidelines should be used if any additional item-specific scoring guidelines are created for use within local instructional programs.*

Item Alignment

All PSSA items are aligned to statements and specifications included in the Assessment Anchor Content Standards documents. The mathematics content included in the PSSA mathematics multiple-choice items will align with the Assessment Anchors as defined by the Eligible Content statements. The process skills, directives, and action statements will also specifically align with the Assessment Anchors as defined by Eligible Content statements.

The mathematics content included in the PSSA mathematics open-ended items will align with content included in Eligible Content statements. The process skills, directives, and action statements included in the performance demands of the PSSA mathematics open-ended items will align with specifications included in the Assessment Anchor statements, the Descriptor statements, and/or the Eligible Content statements. In other words, the verbs or action statements used in the open-ended questions or stems can come from the Eligible Content, Descriptor, or Anchor.

MATHEMATICS

GENERAL DESCRIPTION OF MATHEMATICS SCORING GUIDELINES

4 – The response demonstrates a *thorough* understanding of the mathematical concepts and procedures required by the task.

The response provides correct answer(s) with clear and complete mathematical procedures shown and a correct explanation, as required by the task. Response may contain a minor "blemish" or omission in work or explanation that does not detract from demonstrating a *thorough* understanding.

3 – The response demonstrates a *general* understanding of the mathematical concepts and procedures required by the task.

The response and explanation (as required by the task) are mostly complete and correct. The response may have minor errors or omissions that do not detract from demonstrating a *general* understanding.

2 – The response demonstrates a *partial* understanding of the mathematical concepts and procedures required by the task.

The response is somewhat correct with *partial* understanding of the required mathematical concepts and/or procedures demonstrated and/or explained. The response may contain some work that is incomplete or unclear.

1 – The response demonstrates a *minimal* understanding of the mathematical concepts and procedures required by the task.

0 – The response has no correct answer and *insufficient* evidence to demonstrate any understanding of the mathematical concepts and procedures required by the task for that grade level.

Response may show only information copied from the question.

Special Categories within zero reported separately:

BLK (blank).....Blank, entirely erased, or written refusal to respond
OT.....Off task
IL .....Illegible
LOE .....Response in a language other than English

MATHEMATICS

MATHEMATICS REPORTING CATEGORIES

Mathematics scores are reported in five categories:

- **A** – Numbers and Operations
- **B** – Measurement
- **C** – Geometry
- **D** – Algebraic Concepts
- **E** – Data Analysis and Probability

Examples of multiple-choice and open-ended items assessing these categories are included in this booklet.

DESCRIPTION OF SAMPLE ITEMS

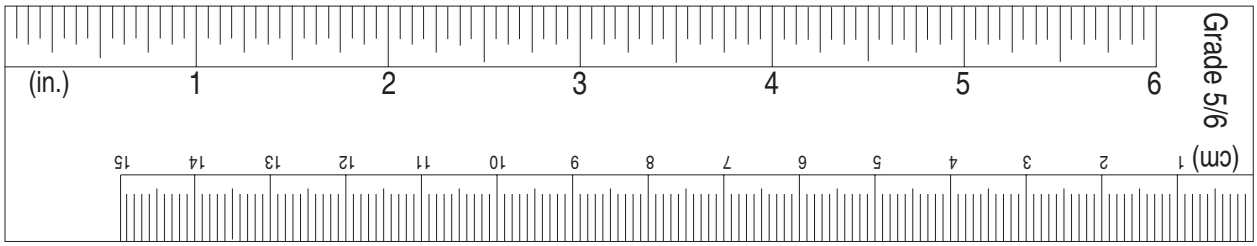
The mathematics multiple-choice items begin on the next page. Each item is preceded by the Assessment Anchor and Eligible Content coding. The majority of answer options A–D are followed by a brief analysis or rationale. The correct answer is indicated by an asterisk (*).

Three open-ended items follow the multiple-choice items. Each of these is displayed with an item-specific scoring guidelines and examples of responses with scores and annotations.

A calculator is permitted for use in solving items numbered 7–52 in this sampler. Items numbered 1–6 are to be solved without the use of a calculator. Scratch paper may be used in solving all items, and a ruler similar to that shown below should be used to answer item numbers 26 and 27.

GRADE 5 RULER

The ruler shown below is not intended to be used to measure. It has been included as a representation of the rulers that will be provided for students when they take the test. Due to differences in printers, etc., the ruler and item numbers 26 and 27 may not accurately reproduce to scale.



MULTIPLE-CHOICE ITEMS

During an assessment, students would not be permitted to use a calculator on items 1–3.

A.2.1.2

1. Subtract: $\frac{7}{8} - \frac{3}{16}$

A $\frac{1}{8}$ — *"converted" $\frac{3}{16}$ to $\frac{6}{8}$; $\frac{7}{8} - \frac{6}{8}$*

B $\frac{4}{16}$ — *subtracted numerators*

C $\frac{4}{8}$ — *subtracted numerators and denominators (ignored sign)*

D $\frac{11}{16}$ — *

A.2.1.2

2. Solve:

$$\frac{1}{4} + \frac{5}{12}$$

A $\frac{5}{48}$ — *$\frac{(1 \times 5)}{(4 \times 12)}$*

B $\frac{6}{16}$ — *$\frac{(5 + 1)}{(4 + 12)}$*

C $\frac{6}{12}$ — *$\frac{(5 + 1)}{12}$*

D $\frac{8}{12}$ — *

A.3.1.2

3. Bill weighs 10 rocks during science class. The rocks weigh a total of 293.8 grams. Each rock weighs about the same amount. Which is the **closest estimate** of the weight of one rock?

A 10 grams — *10 from prompt*

B 20 grams — *10 × 2*

C 30 grams — *

D 40 grams — *10 + 30*

During an assessment, students would not be permitted to use a calculator on items 4–6.

A.3.1.2

4. Which is the **closest estimate** of 11 × 287?

A 2,000 *10 × 200*

B 2,200 *11 × 200*

C 3,000 *

D 3,600 *12 × 300*

A.3.2.1

5. What is the product of 32 and 26?

A 256 *improper alignment of partial products*

B 732 *no regroup in 100s*

C 822 *no regroup in 10s*

D 832 *

A.3.2.1

6. Solve:

$30\overline{)9{,}060}$

A 32

B 302 *

C 322

D 3,002

A.1.1.1

7. What is 8,457 written in expanded notation?

A 800 + 400 + 50 + 7

B 800 + 400 + 500 + 7

C 8,000 + 400 + 50 + 7 *

D 8,000 + 4,000 + 50 + 7

A.1.2.1

8. Hillcrest County received five and nineteen hundredths inches of snow on Tuesday. Which decimal is the same as five and nineteen hundredths inches?

A 0.519 inches *519 ten-thousandths*

B 5.019 inches *5 and 19 thousandths*

C 5.19 inches *

D 519 inches *519 and no hundredths*

A.1.2.2

9. Ms. Brown's car cost $13,042.50. What digit is in the ten-thousands place in 13,042.50?

A 1 *

B 3 *thousands*

C 4 *tens*

D 5 *tenths*

A.1.3.1

10. The populations of 4 cities are listed below.

- 183,456
- 172,554
- 193,334
- 168,321

Which population is **greatest**?

A 183,456
greatest digit in ones place

B 172,554
greatest digit in hundreds place

C 193,334
*

D 168,321
greatest digit in thousands place

A.1.3.2

11. Which of the following lists is in order from **greatest** to **least**?

A 0.34 0.29 0.4 0.04
only 0.04 in correct position

B 0.04 0.4 0.29 0.34
only 0.29 in correct position

C 0.4 0.34 0.29 0.04
*

D 0.29 0.34 0.04 0.4
only 0.34 in correct position

A.1.3.3

12. Four boys each paid money for a new basketball. Jake paid $\frac{2}{16}$ of the money, Marc paid $\frac{1}{4}$, Pete paid $\frac{1}{2}$, and Roy paid $\frac{1}{8}$. Who paid the **greatest** amount of money?

A Jake

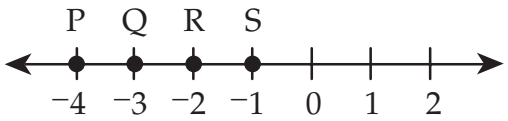
B Marc

C Pete *

D Roy

A.1.4.1

Use the diagram below to answer question 13.



13. Which point is on a number that is **less than** -3?

A point P *

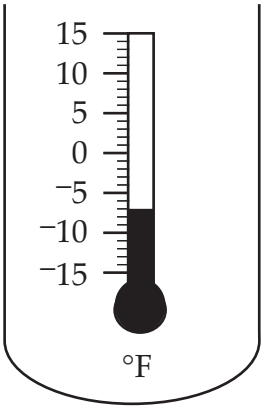
B point Q $-3 = -3$

C point R $-2 > -3$

D point S $-1 > -3$

A.1.4.2

Use the thermometer below to answer question 14.



14. What is the temperature reading on the thermometer?

A −5°F *nearest labeled number*

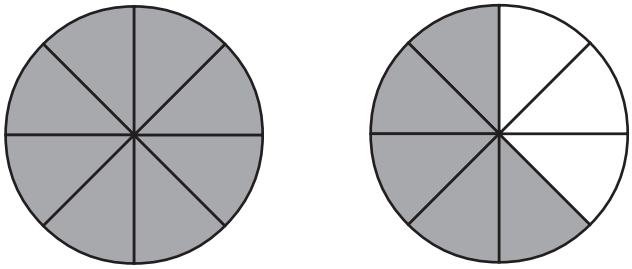
B −7°F *

C −10°F *next labeled number*

D −13°F *counting up from 10*

A.1.5.1

Use the circle graphs below to answer question 15.



15. What mixed number do the shaded sections of the circles represent?

A $1\frac{3}{8}$ *1 whole + 3 unshaded*

B $1\frac{5}{8}$ *

C $8\frac{5}{8}$ *8 sections + $\frac{5}{8}$ shaded*

D $13\frac{3}{8}$ *13 shaded + $\frac{3}{8}$ unshaded*

A.1.6.1

16. Mr. Kelly's age is a prime number. Which number could be his age?

A 33 *composite*

B 49 *composite*

C 58 *composite*

D 83 *

A.1.6.2

17. The numbers 2, 3, 4, and 6 are **all** factors of which number?

A	12	*
B	15	*3 is a factor*
C	16	*2 and 4 are factors*
D	18	*2, 3, and 6 are factors*

A.2.1.1

18. Jim volunteers at an animal shelter 3.5 hours every week. How many hours would Jim volunteer in 26 weeks?

A	78 hours	*26 × 3*
B	90 hours	*91 rounded*
C	91 hours	*
D	910 hours	*26 × 35*

A.2.1.3

19. During the past 2 weeks, a total of 378 cartons of juice were sold in the school cafeteria. Each carton costs $0.75. Which expression could be used to find the total cost of the juice that was sold?

A	$2 + 378 + \$0.75$	*addition of numbers in stem*
B	$2 \times 378 \times \$0.75$	*multiplication of all numbers*
C	$378 \times \$0.75$	*
D	$378 \div \$0.75$	*division of correct numbers*

A.3.1.1

20. What is 351.24 rounded to the nearest tenth?

A	350	*rounded to tens*
B	351	*rounded to ones*
C	351.2	*
D	351.3	*rounded to tenths incorrectly*

B.1.1.1

21. Kareem put a fence around the perimeter of a baseball field. Which units are reasonable for measuring the perimeter?

A yards *

B kilometers *unit too long*

C square feet *area*

D square inches *area*

B.1.2.1

22. Bobby added 1 **cup** of cooking oil to 2 **pints** of cooking oil. How many **cups** of cooking oil did Bobby have altogether? (Hint: 1 pint = 2 cups.)

A 2 *converted "backwards," 2 pints = 1 cup*

B 3 *1 cup + 2 pints*

C 4 *2 cups + 2 cups, forgot 1 cup*

D 5 *

B.1.2.2

23. It took 4 hours and 35 minutes to cook a turkey. It took 1 hour and 18 minutes to cook soup. How much longer did it take to cook the turkey than the soup?

A 3 hours 17 minutes *

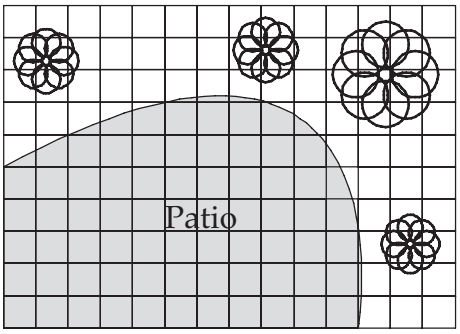
B 3 hours 23 minutes *subtraction error*

C 5 hours 17 minutes *addition; subtraction*

D 5 hours 53 minutes *addition*

B.1.3.2

24. Jarel drew a diagram of his backyard on the grid below to show the size of his new patio.



= 1 square foot (ft^2)

Which is the **closest** estimate of the area of the patio?

A 50 ft^2

B 70 ft^2 *

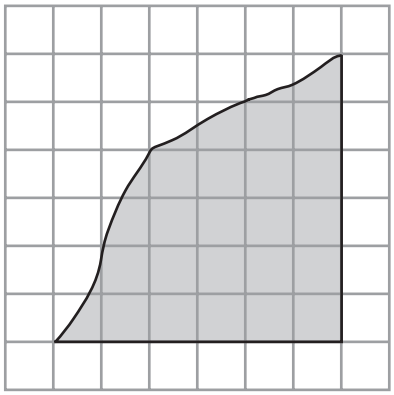
C 90 ft^2

D 110 ft^2

B.1.3.2

25. Don shaded the area of a flower bed on the grid below.

Flower Bed



= **1 square unit**

Which estimate is closest to the shaded area?

A 18 square units *approximate perimeter*

B 25 square units *

C 36 square units *6 × 6*

D 64 square units *8 × 8*

B.2.1.1

26. Natasha took the picture of a tree shown below.

Using your ruler, how tall is the tree in the picture?

A $2\frac{1}{8}$ inches

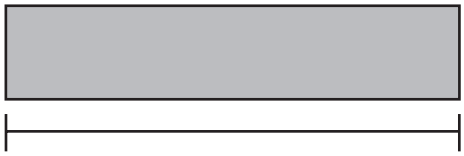
B $2\frac{1}{4}$ inches

C $2\frac{3}{8}$ inches *

D $2\frac{1}{2}$ inches

B.2.1.1

27. Alma cut a ribbon to glue on a card.

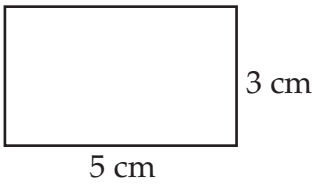


Using your ruler, what is the length of the ribbon in centimeters (cm)?

A	2 cm	*nearest inch*
B	5 cm	*shorter measure*
C	6 cm	*
D	7 cm	*ruler set at 1 cm*

B.2.2.2

28. Shawna drew the rectangle below.

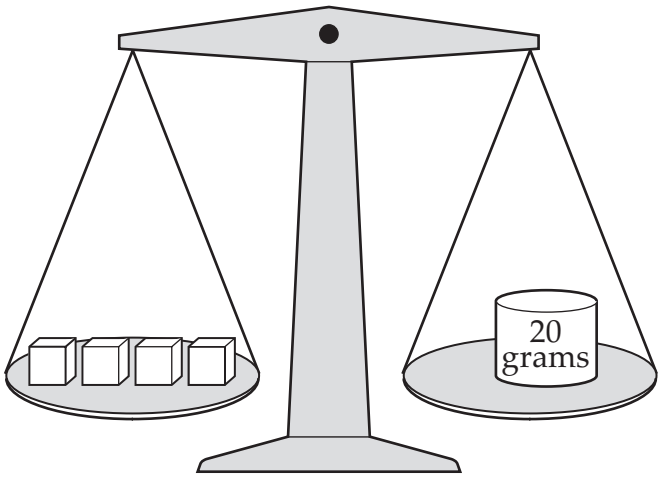


What is the area of the rectangle?

A	8 square cm	*5 + 3*
B	13 square cm	*5 + 5 + 3*
C	15 square cm	*
D	16 square cm	*5 + 5 + 3 + 3*

B.2.2.3

29. The scale shown below is balanced. Each cube on the left side weighs the same amount.



How much does **one** of the cubes weigh?

A	1 gram	*1 cube = 1 gram*
B	4 grams	*number of cubes*
C	5 grams	*
D	20 grams	*weight of cylinder*

C.1.1.1

30. Paul has a container in the shape of a square pyramid. How many vertices does the container have?

A 4 — *number of vertices on a triangular pyramid*

B 5 — *

C 6 — *number of edges on a triangular pyramid*

D 8 — *number of edges on a square pyramid*

C.1.1.2

31. Which set of properties describes a rhombus?

A 4 sides and opposite angles not equal in measurement — *other quadrilateral*

B 4 sides equal in length and 4 angles equal in measurement — *square*

C opposite sides equal in length and 4 angles equal in measurement — *rectangle*

D 4 sides equal in length and opposite angles equal in measurement — *

C.1.1.2

32. Which is a property of all parallelograms?

A 4 equal sides — *rhombi (including squares) only*

B 4 right angles — *rectangles (including squares) only*

C 2 pairs of parallel sides — *

D 2 pairs of perpendicular sides — *rectangles (including squares) only*

C.1.2.1

33. Which is a drawing of a line?

A  — *ray*

B — *line segment*

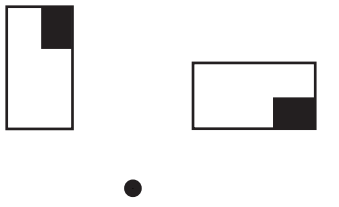
C  — *point*

D  — *

C.2.1.1

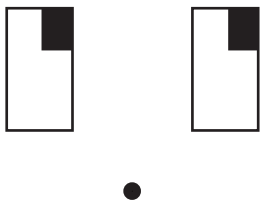
34. Which drawing below shows a rotation (turn) of the figure about the point?

A



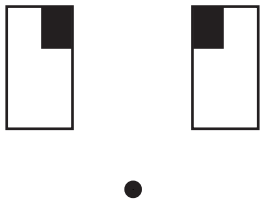
*

B



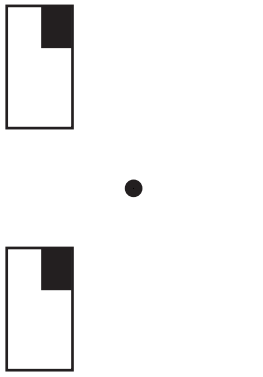
slide

C



flip

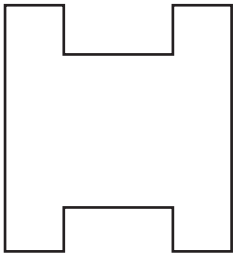
D



slide

C.2.1.2

35. Megan drew the polygon below in art class.



Exactly how many lines of symmetry does Megan's polygon have?

A 1 *1 vertical line or 1 horizontal line*

B 2 *

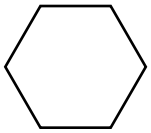
C 3 *1 horizontal and 2 vertical lines (one for each "post")*

D 4 *2 diagonal, 1 horizontal, and 1 vertical lines*

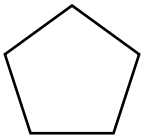
D.1.1.1

36. A pattern of shapes is shown below.

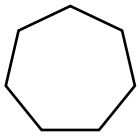
Which shape is missing in the pattern?

A 

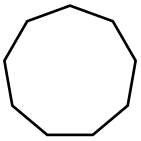
too many sides

B 

*

C 

too many sides

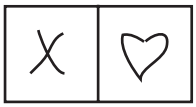
D 

too many sides

D.1.1.1

37. Darcy made the pattern below using game tiles.

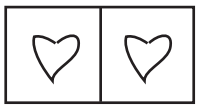
Which 2 tiles come next in the pattern?

A 

first 2 tiles

B 

misses 2nd heart in series

C 

knows 2 hearts are together

D 

*

D.1.1.2

38. The shapes below follow a pattern.

Which letters follow the same pattern?

A L M N L L M N L L *first letter repeated*

B M N L N M M N L N *first 2 letters reflected over 3rd letter*

C L M N L M N L M N *

D M N M L M N M L M *1st letter repeated every other letter*

D.1.2.1

39. Which number pattern uses the rule: multiply by 3?

A 10, 13, 16, 19, 22, …
add 3

B 15, 45, 135, 405, 1215, …
*

C 20, 100, 500, 2500, 12500, …
multiply by 5

D 25, 100, 400, 1600, 6400, …
multiply by 4

D.1.2.1

40. Which pattern of numbers follows the rule: divide by 2 then add 4?

A 10, 8, 32, 30, 120, 118, 472
subtract 2; multiply by 4

B 40, 20, 16, 8, 4, 2, −2
divide by 2; subtract 4

C 120, 60, 64, 32, 36, 18, 22
*

D 320, 160, 80, 40, 20, 10, 5
divide by 2

D.2.1.1

Use the equation below to answer question 41.

$$54 \div n = 6$$

41. What is the value of n?

A 7 *common error*

B 9 *

C 48 *54 – 6*

D 60 *54 + 6*

D.2.1.2

42. Shana prints 4 cards each minute. Which equation shows the number of cards, c, that she has printed at the end of 6 minutes?

A $4 \times 6 = c$ *

B $4 + 6 = c$

C $24 + 4 = c$

D $24 \times 4 = c$

D.2.1.2

43. A photographer used 32 rolls of film in 1 day. Each roll of film has 24 pictures. Which number sentence represents n, the total number of pictures in 1 day?

A $n = 32 + 24$

B $n = 32 - 24$

C $n = 32 \times 24$ *

D $n = 32 \div 24$

E.1.1.1

44. The pictograph below shows the instruments played by the students in the Franklin School band.

Franklin School Band

Flute	◯◯(
Clarinet	◯◯
Trumpet	◯◯
Saxophone	◯(
Drums	◯
French Horn	◯

◯ = 4 students

How many students play saxophone?

A 2 *2 symbols*

B 4 *1 whole symbol*

C 6 *

D 8 *2 symbols × 4*

E.2.1.1

45. Annika's basketball team played 9 games this winter. The points earned at each game are listed below.

23, 18, 30, 21, 24, 21, 21, 27, 22

What is the **median** number of points earned by Annika's team?

A 21 *mode*

B 22 *

C 23 *mean (average)*

D 24 *middle value in given list*

E.2.1.2

46. Steve's phone book listed the following area codes for his friends.

Steve's Friends

Name	Area Code
Han	916
Ji	209
Liang	908
Matt	209
Paula	805
Rosa	831
Tito	916
Wally	831
Zoe	209

What is the **mode** of the area codes?

A 209 *

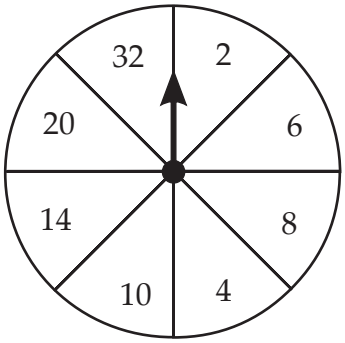
B 805 *middle, as listed*

C 831 *median; listed twice*

D 916 *listed twice*

E.3.1.1

Use the spinner below to answer question 47.



47. What is the likelihood that the arrow will point to an odd number on the next spin?

A certain

B impossible *

C most likely

D least likely

E.3.1.2

48. Yang had 10 blue, 6 red, 7 green, and 8 brown rubber bands in his drawer. He took one out without looking. What is the probability that he took out a brown rubber band?

A $\frac{1}{31}$ *1 out of total*

B $\frac{1}{8}$ *1 out of 8 brown*

C $\frac{8}{23}$ *8 brown / 23 non-brown*

D $\frac{8}{31}$ *

E.3.1.2

49. Matthew has a 6-sided number cube. The sides are numbered 1 through 6. Matthew rolls the number cube. What is the probability that Matthew rolls a number greater than 2?

A $\frac{2}{6}$ *probability of 2 or 1*

B $\frac{2}{4}$ *odds against*

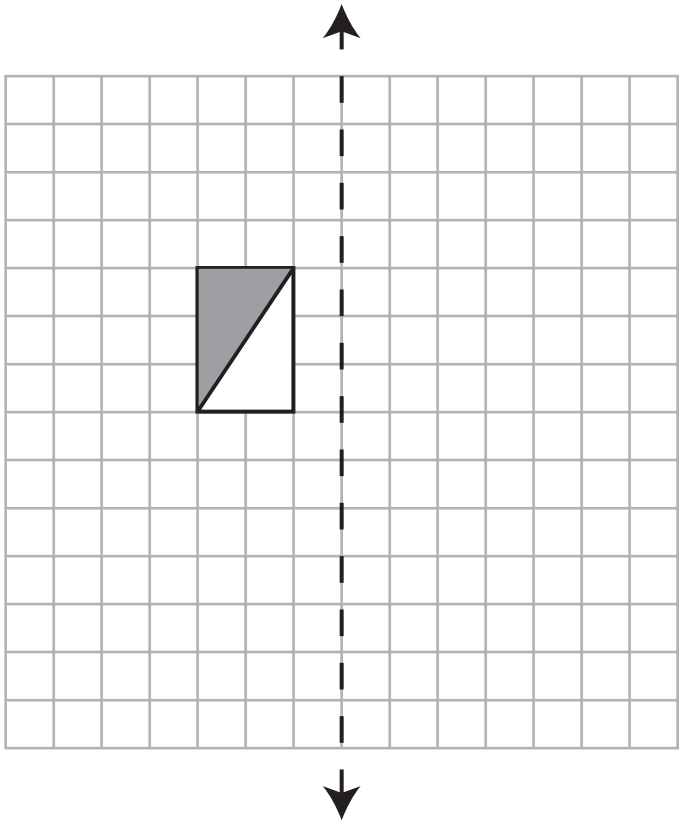
C $\frac{4}{6}$ *

D $\frac{4}{2}$ *odds in favor*

FIRST OPEN-ENDED ITEM

C.2

50. Lori drew the card design below on a grid.



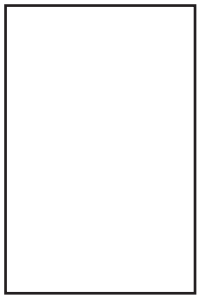
A. Draw a reflection (flip) of Lori's shaded card over the dashed line on the grid. Label the reflected card by writing an "R" on the card.

B. Draw a translation (slide) of Lori's original shaded card 2 units left and 3 units up on the grid. Label the translated card by writing a "T" on the card.

GO TO THE NEXT PAGE TO FINISH THE QUESTION.

50. ***Continued***. Please refer to the previous page for task explanation.

Lori had the blank card shown below ready for a new design.



C. Use a straightedge to draw all the lines of symmetry on the blank card.

D. Write 1 letter of the alphabet that has exactly 2 lines of symmetry.

ITEM-SPECIFIC SCORING GUIDELINE

Item #50

This item will be reported under Category C, Geometry.

Assessment Anchor:

C.2–Identify and/or apply concepts of transformations or symmetry.

Specific Eligible Content addressed by this item:

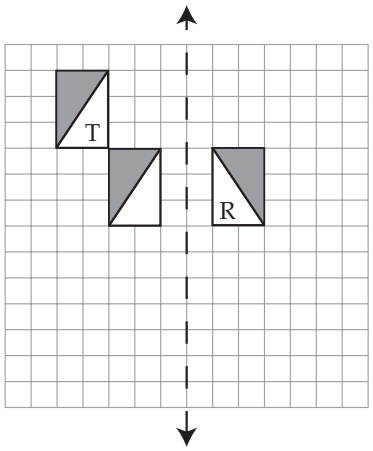
C.2.1.1–Draw or identify a translation (slide), reflection (flip), or rotation (turn) of a 2-dimensional shape.
C.2.1.2–Identify the number of lines of symmetry and/or draw all lines of symmetry in a 2-dimensional polygon.

Scoring Guide:

Score	In response to this item, the student—
4	demonstrates a thorough understanding of reflections, translations, and lines of symmetry by correctly solving problems and clearly explaining procedures.
3	demonstrates a general understanding of reflections, translations, and lines of symmetry with only minor errors or omissions.
2	demonstrates a partial understanding of reflections, translations, and lines of symmetry by correctly performing a significant portion of the required task.
1	demonstrates minimal understanding of reflections, translations, and lines of symmetry.
0	The response has given no correct answer and insufficient evidence to demonstrate any understanding of the mathematical concepts and procedures as required by the task. Response may show only information copied from the question.
Non-scorable	BLK (blank)... Blank, entirely erased, or written refusal to respond OT.....Off task IL ..... Illegible LOE ..... Response in a language other than English

Top Scoring Response:

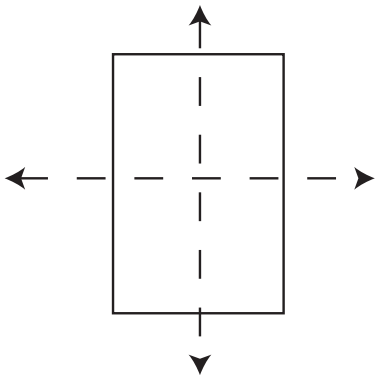
Parts A & B Transformations



(2 score points)

1 point for each correct transformation

Part C Lines of Symmetry



(1 score point)

1 point for correct lines

Part D Letter
H, I, O, or X

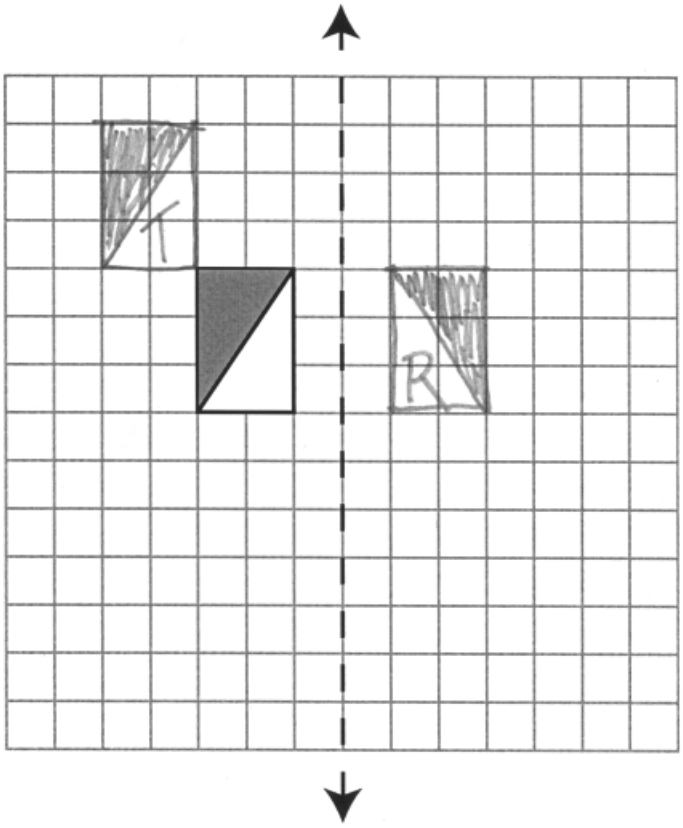
(1 score point)

1 point for a correct letter

OPEN-ENDED ITEM RESPONSES

C.2 Response Score: 4

50. Lori drew the card design below on a grid.



A. Draw a reflection (flip) of Lori's shaded card over the dashed line on the grid. Label the reflected card by writing an "R" on the card.

The student has shown the correct reflection.

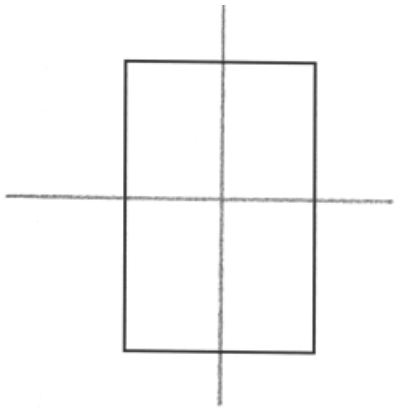
B. Draw a translation (slide) of Lori's original shaded card 2 units left and 3 units up on the grid. Label the translated card by writing a "T" on the card.

The student has shown the correct translation.

GO TO THE NEXT PAGE TO FINISH THE QUESTION.

50. ***Continued***. Please refer to the previous page for task explanation.

Lori had the blank card shown below ready for a new design.



C. Use a straightedge to draw all the lines of symmetry on the blank card.

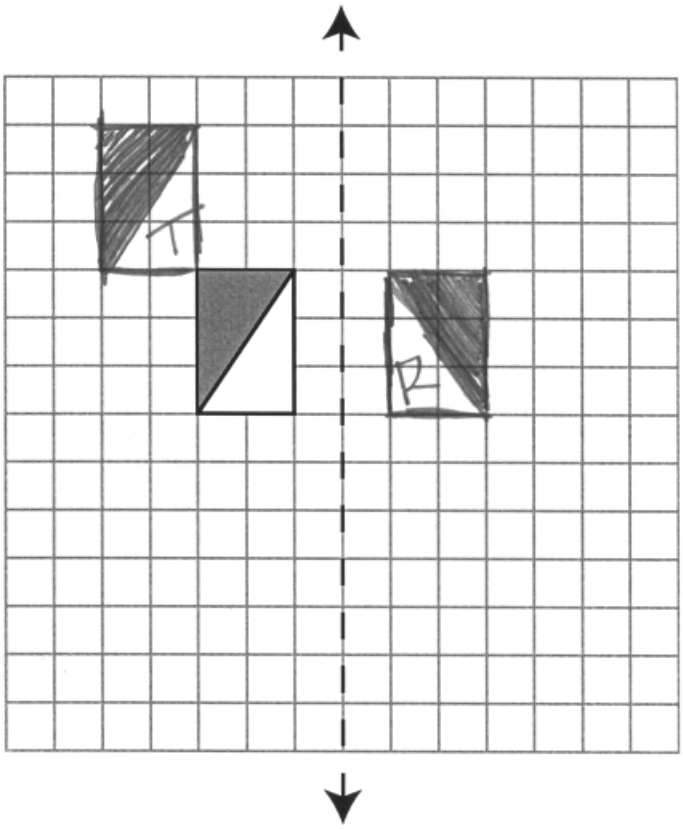
The student has drawn the correct lines of symmetry.

D. Write 1 letter of the alphabet that has exactly 2 lines of symmetry.

The student has given a correct letter.

C.2 Response Score: 3

50. Lori drew the card design below on a grid.



A. Draw a reflection (flip) of Lori's shaded card over the dashed line on the grid. Label the reflected card by writing an "R" on the card.

The student has shown the correct reflection.

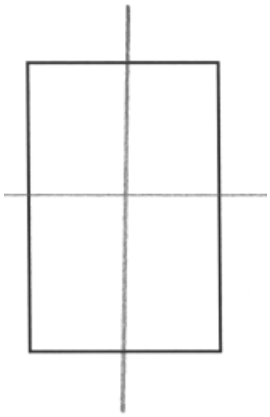
B. Draw a translation (slide) of Lori's original shaded card 2 units left and 3 units up on the grid. Label the translated card by writing a "T" on the card.

The student has shown the correct translation.

GO TO THE NEXT PAGE TO FINISH THE QUESTION.

50. ***Continued***. Please refer to the previous page for task explanation.

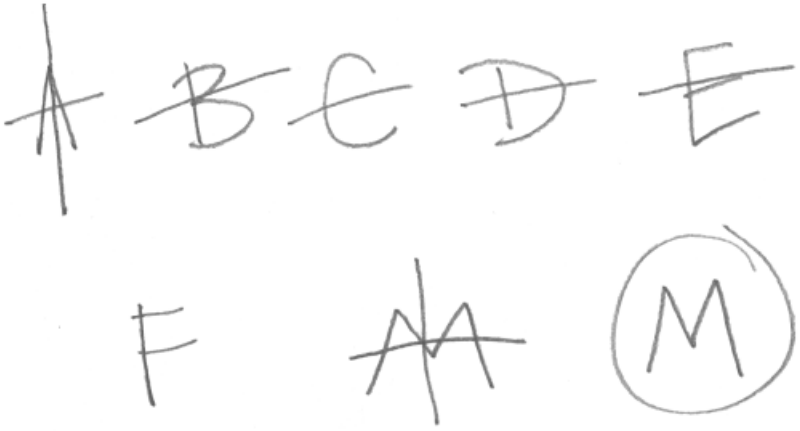
Lori had the blank card shown below ready for a new design.



C. Use a straightedge to draw all the lines of symmetry on the blank card.

The student has drawn the correct lines of symmetry.

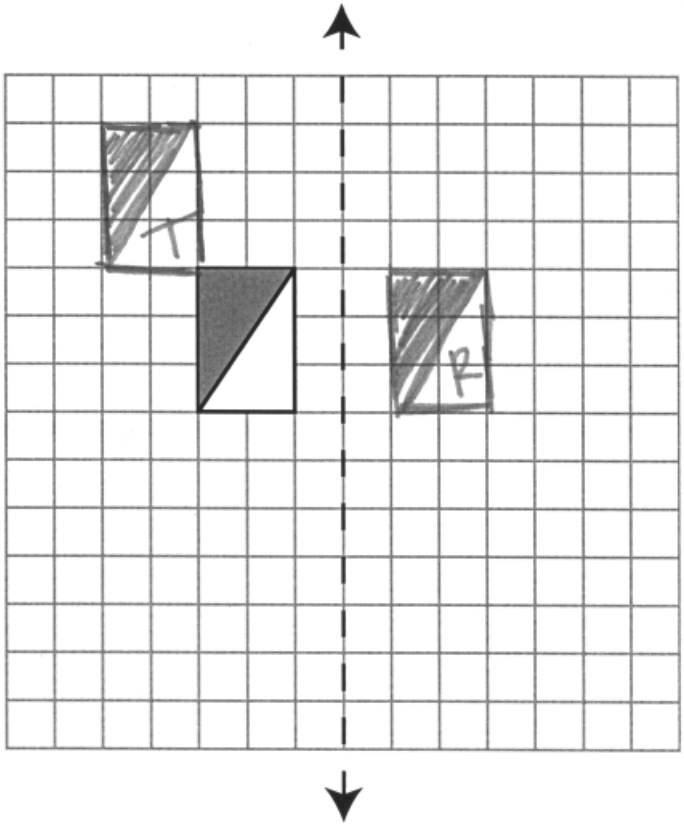
D. Write 1 letter of the alphabet that has exactly 2 lines of symmetry.



The student has given an incorrect letter.

C.2 Response Score: 3

50. Lori drew the card design below on a grid.



A. Draw a reflection (flip) of Lori's shaded card over the dashed line on the grid. Label the reflected card by writing an "R" on the card.

The student has shown an incorrect reflection.

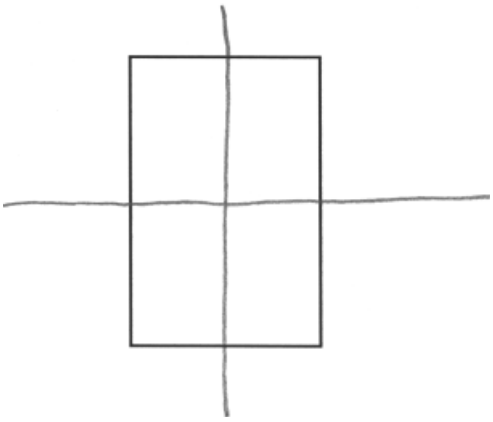
B. Draw a translation (slide) of Lori's original shaded card 2 units left and 3 units up on the grid. Label the translated card by writing a "T" on the card.

The student has shown the correct translation.

GO TO THE NEXT PAGE TO FINISH THE QUESTION.

50. ***Continued***. Please refer to the previous page for task explanation.

Lori had the blank card shown below ready for a new design.



C. Use a straightedge to draw all the lines of symmetry on the blank card.

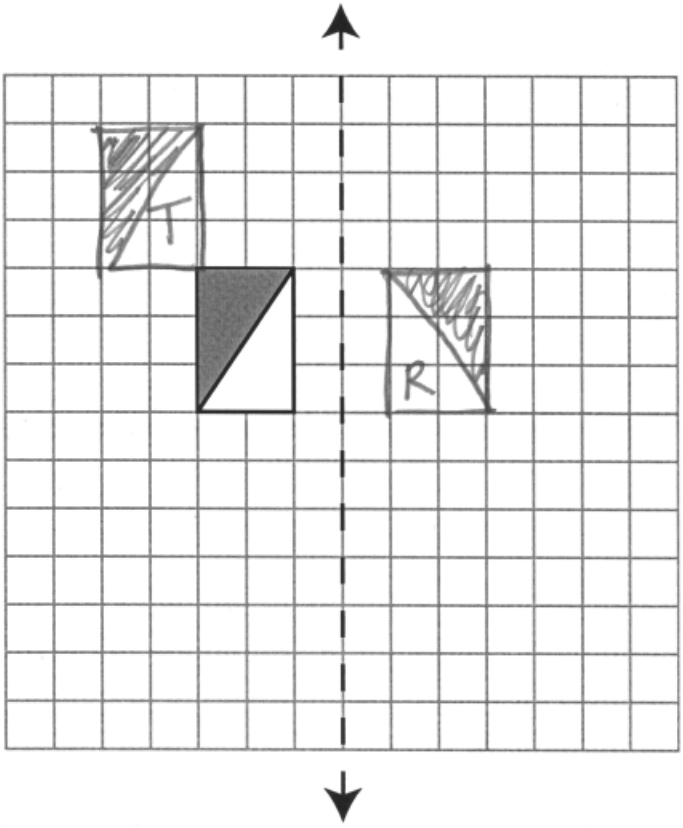
The student has drawn the correct lines of symmetry.

D. Write 1 letter of the alphabet that has exactly 2 lines of symmetry.

The student has given a correct letter.

C.2 Response Score: 2

50. Lori drew the card design below on a grid.



A. Draw a reflection (flip) of Lori's shaded card over the dashed line on the grid. Label the reflected card by writing an "R" on the card.

The student has shown the correct reflection.

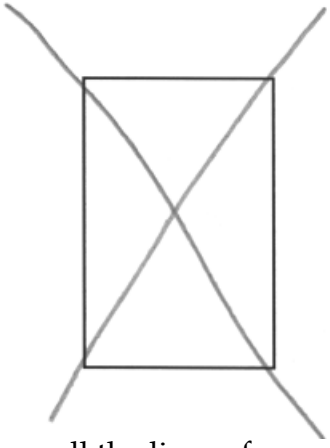
B. Draw a translation (slide) of Lori's original shaded card 2 units left and 3 units up on the grid. Label the translated card by writing a "T" on the card.

The student has shown the correct translation.

GO TO THE NEXT PAGE TO FINISH THE QUESTION.

50. ***Continued***. Please refer to the previous page for task explanation.

Lori had the blank card shown below ready for a new design.



C. Use a straightedge to draw all the lines of symmetry on the blank card.

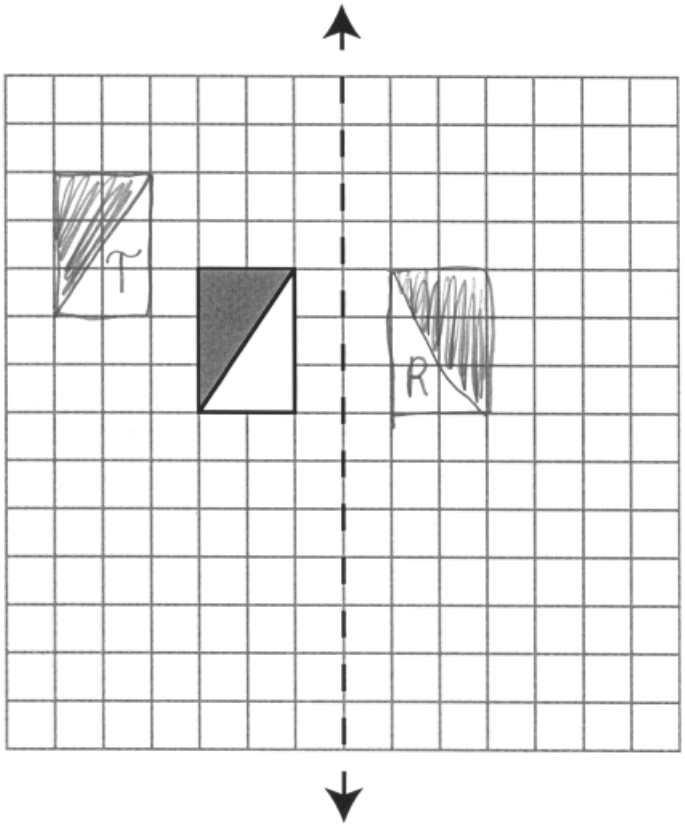
The student has drawn incorrect lines of symmetry.

D. Write 1 letter of the alphabet that has exactly 2 lines of symmetry.

The student has given an incorrect letter.

C.2 Response Score: 2

50. Lori drew the card design below on a grid.



A. Draw a reflection (flip) of Lori's shaded card over the dashed line on the grid. Label the reflected card by writing an "R" on the card.

The student has shown the correct reflection.

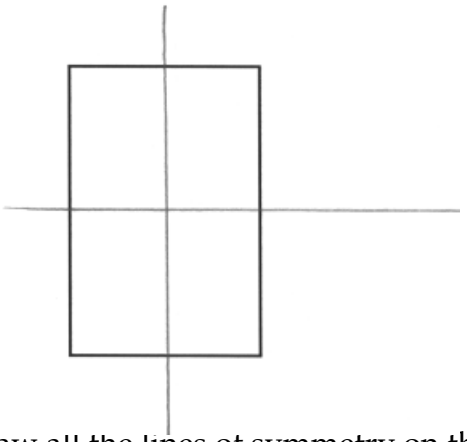
B. Draw a translation (slide) of Lori's original shaded card 2 units left and 3 units up on the grid. Label the translated card by writing a "T" on the card.

The student has shown an incorrect translation.

GO TO THE NEXT PAGE TO FINISH THE QUESTION.

50. ***Continued***. Please refer to the previous page for task explanation.

Lori had the blank card shown below ready for a new design.



C. Use a straightedge to draw all the lines of symmetry on the blank card.

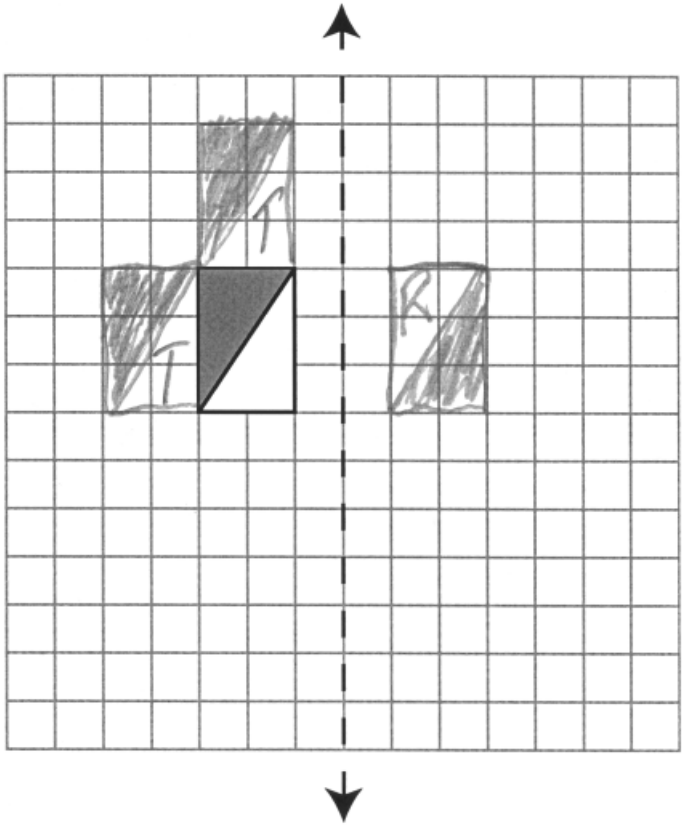
The student has drawn the correct lines of symmetry.

D. Write 1 letter of the alphabet that has exactly 2 lines of symmetry.

The student has given an incorrect letter.

C.2 Response Score: 1

50. Lori drew the card design below on a grid.



A. Draw a reflection (flip) of Lori's shaded card over the dashed line on the grid. Label the reflected card by writing an "R" on the card.

The student has shown an incorrect reflection.

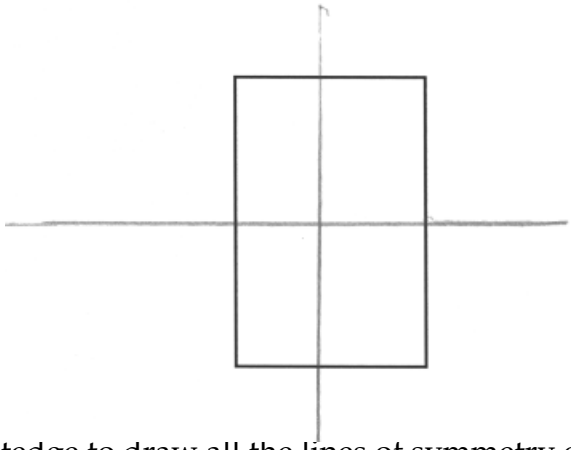
B. Draw a translation (slide) of Lori's original shaded card 2 units left and 3 units up on the grid. Label the translated card by writing a "T" on the card.

The student has shown an incorrect translation.

GO TO THE NEXT PAGE TO FINISH THE QUESTION.

50. ***Continued***. Please refer to the previous page for task explanation.

Lori had the blank card shown below ready for a new design.



C. Use a straightedge to draw all the lines of symmetry on the blank card.

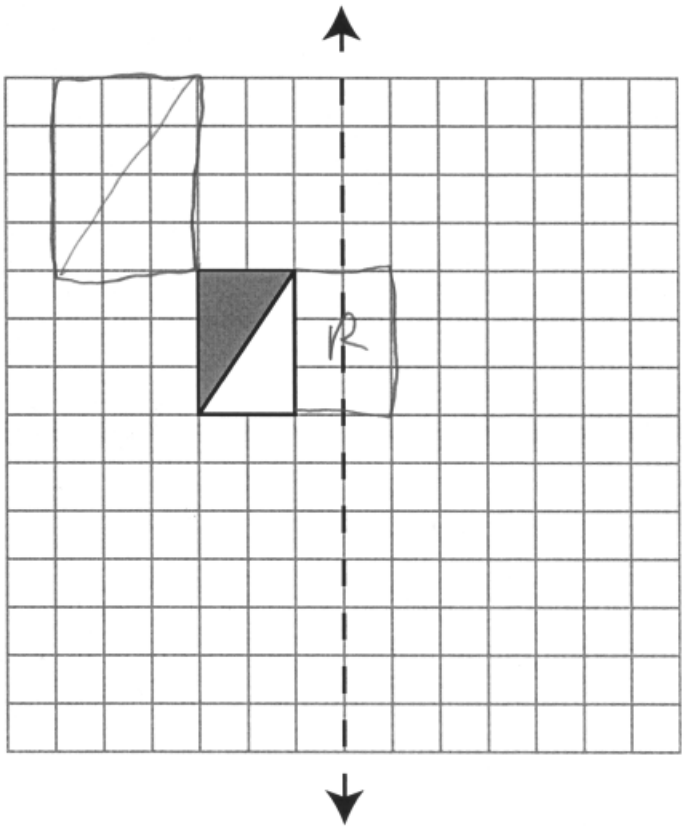
The student has drawn the correct lines of symmetry.

D. Write 1 letter of the alphabet that has exactly 2 lines of symmetry.

The student has given an incorrect letter.

C.2 Response Score: 1

50. Lori drew the card design below on a grid.



A. Draw a reflection (flip) of Lori's shaded card over the dashed line on the grid. Label the reflected card by writing an "R" on the card.

The student has shown an incorrect reflection.

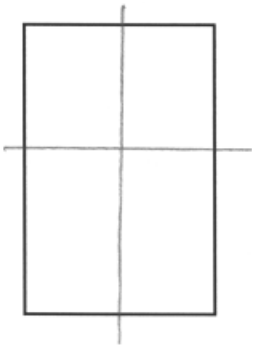
B. Draw a translation (slide) of Lori's original shaded card 2 units left and 3 units up on the grid. Label the translated card by writing a "T" on the card.

The student has shown an incorrect translation.

GO TO THE NEXT PAGE TO FINISH THE QUESTION.

50. ***Continued***. Please refer to the previous page for task explanation.

Lori had the blank card shown below ready for a new design.



C. Use a straightedge to draw all the lines of symmetry on the blank card.

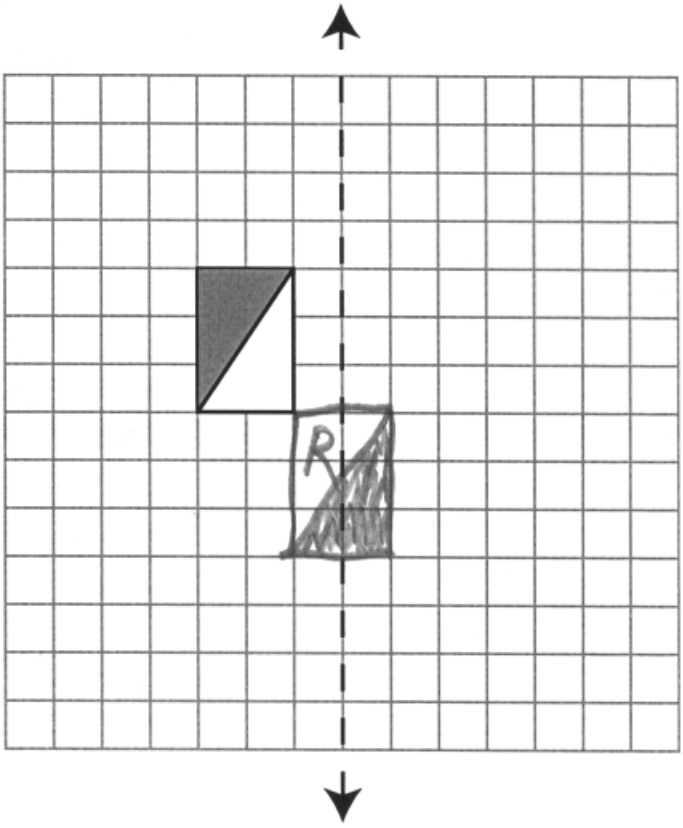
The student has drawn the correct lines of symmetry.

D. Write 1 letter of the alphabet that has exactly 2 lines of symmetry.

The student has given an incorrect letter.

C.2 Response Score: 0

50. Lori drew the card design below on a grid.



A. Draw a reflection (flip) of Lori's shaded card over the dashed line on the grid. Label the reflected card by writing an "R" on the card.

The student has shown an incorrect reflection.

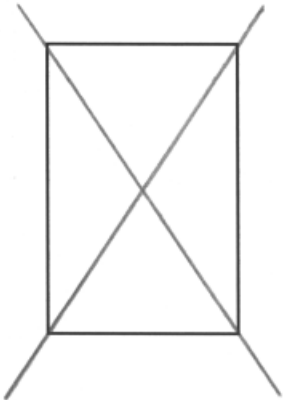
B. Draw a translation (slide) of Lori's original shaded card 2 units left and 3 units up on the grid. Label the translated card by writing a "T" on the card.

The student has not shown a translation.

GO TO THE NEXT PAGE TO FINISH THE QUESTION.

50. ***Continued***. Please refer to the previous page for task explanation.

Lori had the blank card shown below ready for a new design.



C. Use a straightedge to draw all the lines of symmetry on the blank card.

The student has drawn incorrect lines of symmetry.

D. Write 1 letter of the alphabet that has exactly 2 lines of symmetry.

The student has not given a correct letter.

SECOND OPEN-ENDED ITEM

E.1

51. A carnival has 3 rides for children.

A. The table below shows the number of children who went on each ride during its first 3 runs of the day.

Complete the table to show the total number of children who went on each ride during its first 3 runs of the day.

Number of Children

Rides	1st Run	2nd Run	3rd Run	Total Number of Children
Laser Fire	8	7	5	
Canyon Trip	4	7	4	
Flash Back	9	9	6	

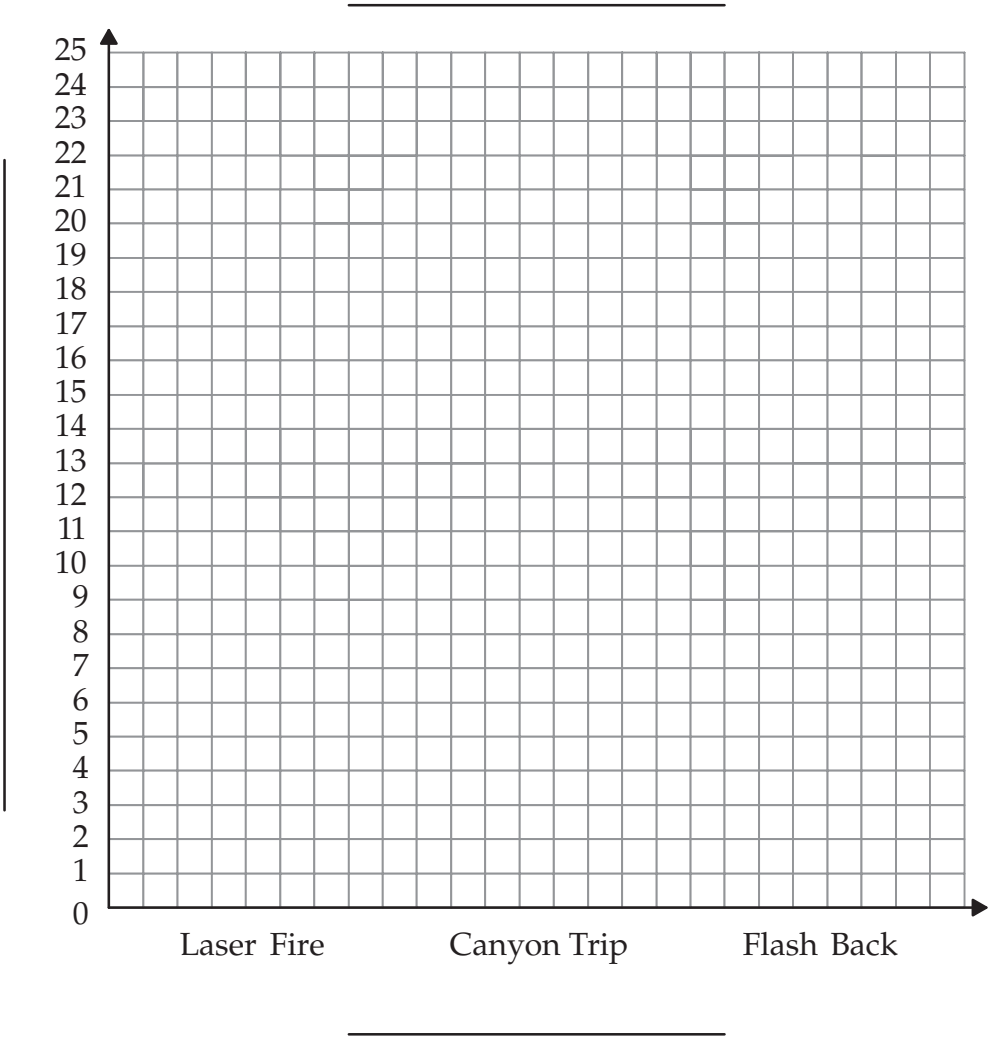
GO TO THE NEXT PAGE TO FINISH THE QUESTION.

51. ***Continued.*** Please refer to the previous page for task explanation.

B. Using your answer from **part A**, draw a bar graph that shows the total number of children who went on each ride during its first 3 runs of the day.

Be sure to:

- title the graph.
- label both axes.



ITEM-SPECIFIC SCORING GUIDELINE

Item #51

This item will be reported under Category E, Data Analysis and Probability.

Assessment Anchor:

E.1–Formulate or answer questions that can be addressed with data and/or organize, display, interpret or analyze data.

Specific Eligible Content addressed by this item:

E.1.1.1–Display and/or interpret data shown in tallies, tables, charts, pictographs, bar graphs, and line graphs using a title, appropriate scale, and labels.

Scoring Guide:

Score	In response to this item, the student—
4	demonstrates a thorough understanding of how to display and/or interpret data shown in tables and bar graphs using a title, appropriate scale, and labels by correctly solving problems and clearly explaining procedures.
3	demonstrates a general understanding of how to display and/or interpret data shown in tables and bar graphs using a title, appropriate scale, and labels by correctly solving problems and clearly explaining procedures with only minor errors or omissions.
2	demonstrates a partial understanding of how to display and/or interpret data shown in tables and bar graphs using a title, appropriate scale, and labels by correctly performing a significant portion of the required task.
1	demonstrates minimal understanding of how to display and/or interpret data shown in tables and bar graphs using a title, appropriate scale, and labels.
0	The response has no correct answer and insufficient evidence to demonstrate any understanding of the mathematical concepts and procedures as required by the task. Response may show only information copied from the question.
Non-scorable	BLK (blank)... Blank, entirely erased, or written refusal to respond OT.....Off task IL.....Illegible LOE.....Response in a language other than English

Item #51

Top Scoring Response:

Part A Answers

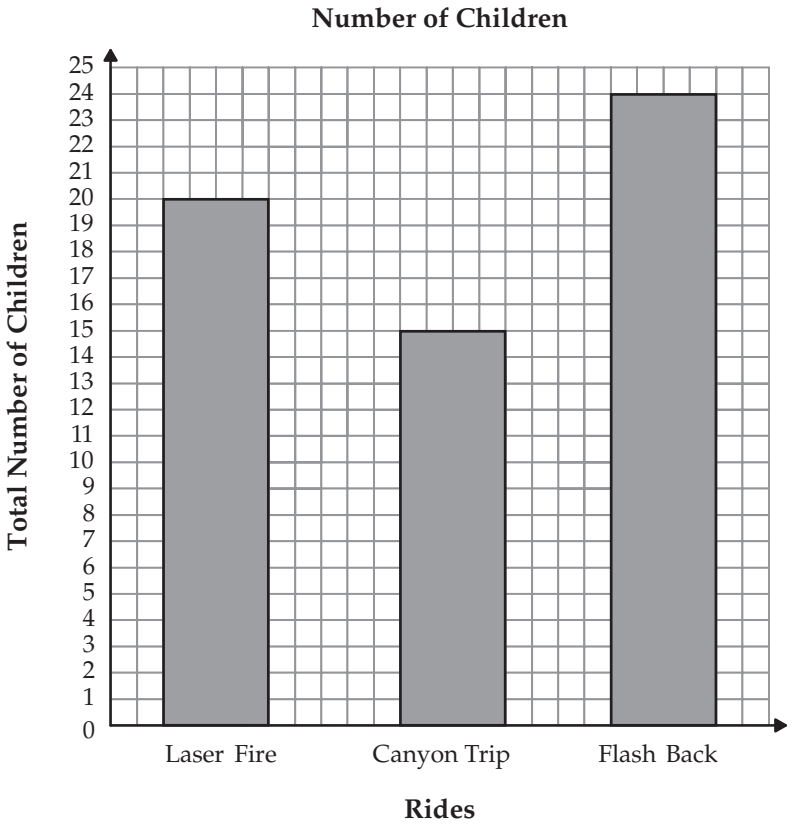
Number of Children

Rides	1st Run	2nd Run	3rd Run	Total Number of Children
Laser Fire	8	7	5	**20**
Canyon Trip	4	7	4	**15**
Flash Back	9	9	6	**24**

(1 score point)

1 point for correct and complete table
Deduct 0.5 point for each incorrect table entry*

Part B Answer



(3 score points)

1.5 points for appropriate labels and uniform bar width
Deduct 0.5 point for each error*
1.5 points for correct bar heights (based on the table in Part A)
Deduct 0.5 point for each error*

*Do not deduct below 0 points for any task.

OPEN-ENDED ITEM RESPONSES

E.1 Response Score: 4

51. A carnival has 3 rides for children.

A. The table below shows the number of children who went on each ride during its first 3 runs of the day.

Complete the table to show the total number of children who went on each ride during its first 3 runs of the day.

Number of Children

Rides	1st Run	2nd Run	3rd Run	Total Number of Children
Laser Fire	8	7	5	20
Canyon Trip	4	7	4	15
Flash Back	9	9	6	24

The student has given all correct answers.

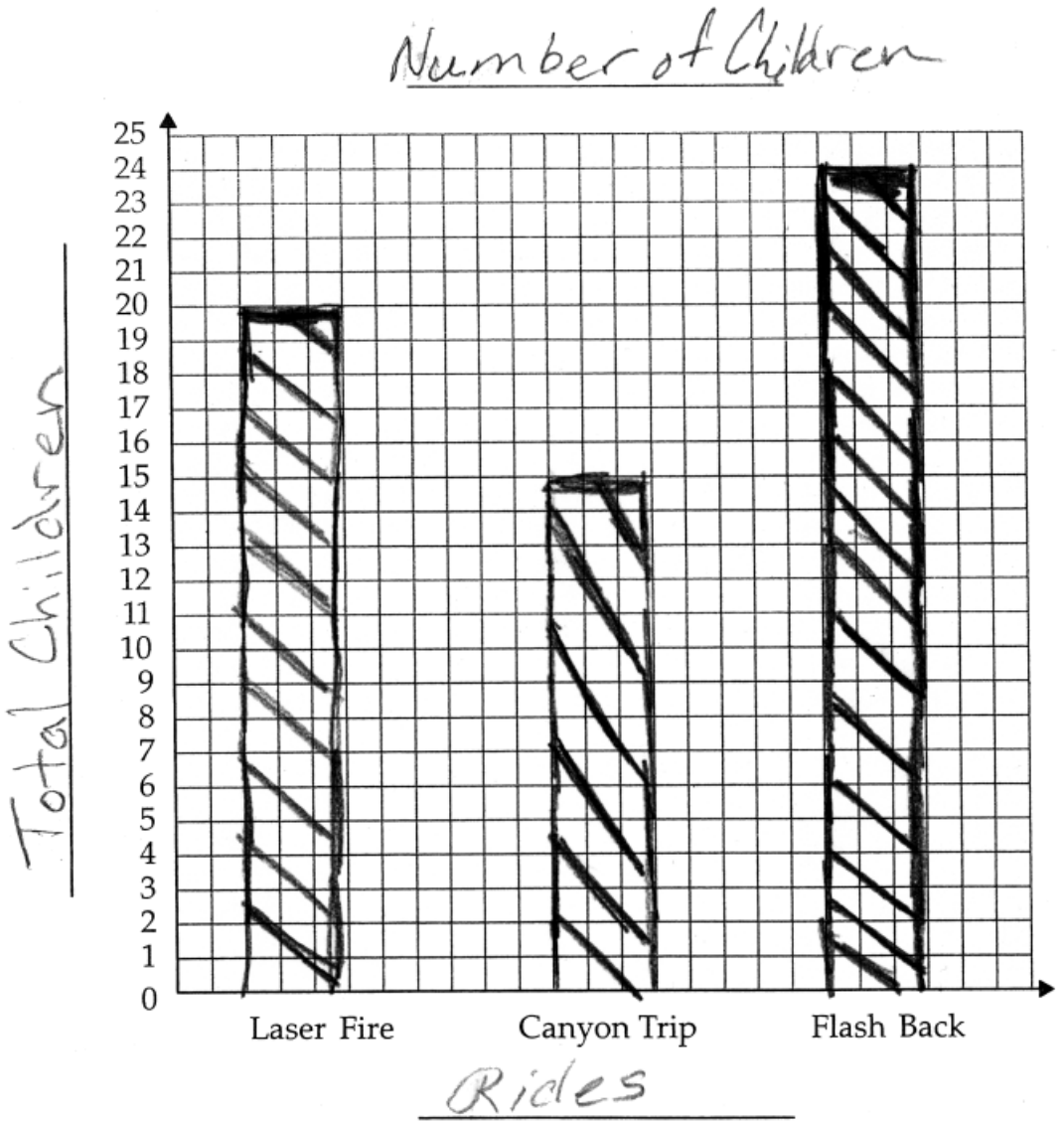
GO TO THE NEXT PAGE TO FINISH THE QUESTION.

51. ***Continued.*** Please refer to the previous page for task explanation.

B. Using your answer from **part A**, draw a bar graph that shows the total number of children who went on each ride during its first 3 runs of the day.

Be sure to:

- title the graph.
- label both axes.



The student has drawn a correct bar graph.
The student has used correct title and labels.

E.1 Response Score: 3

51. A carnival has 3 rides for children.

A. The table below shows the number of children who went on each ride during its first 3 runs of the day.

Complete the table to show the total number of children who went on each ride during its first 3 runs of the day.

Number of Children

Rides	1st Run	2nd Run	3rd Run	Total Number of Children
Laser Fire	8	7	5	20
Canyon Trip	4	7	4	15
Flash Back	9	9	6	24

The student has given all correct answers.

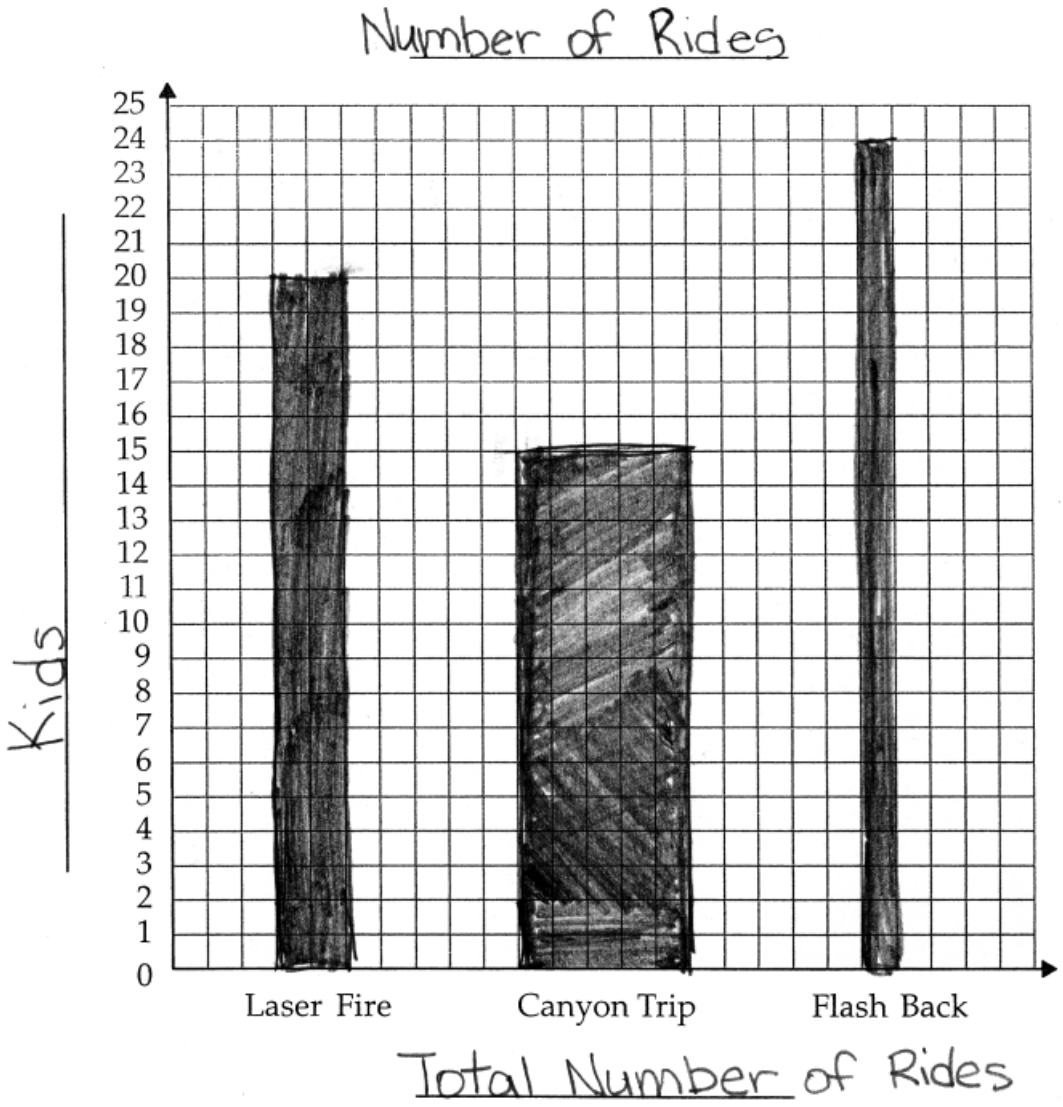
GO TO THE NEXT PAGE TO FINISH THE QUESTION.

51. ***Continued.*** Please refer to the previous page for task explanation.

B. Using your answer from **part A**, draw a bar graph that shows the total number of children who went on each ride during its first 3 runs of the day.

Be sure to:

- title the graph.
- label both axes.



The student has drawn a bar graph with correct heights but non-uniform widths. The student has not used a correct title.

E.1 Response Score: 3

51. A carnival has 3 rides for children.

A. The table below shows the number of children who went on each ride during its first 3 runs of the day.

Complete the table to show the total number of children who went on each ride during its first 3 runs of the day.

Number of Children

Rides	1st Run	2nd Run	3rd Run	Total Number of Children
Laser Fire	8	7	5	20
Canyon Trip	4	7	4	17
Flash Back	9	9	6	24

8 + 7 = 15
15 + 5 = 20

4 + 7 = 13
13 + 4 = 17

9 + 9 = 18
18 + 6 = 24

The student has given an incorrect answer.

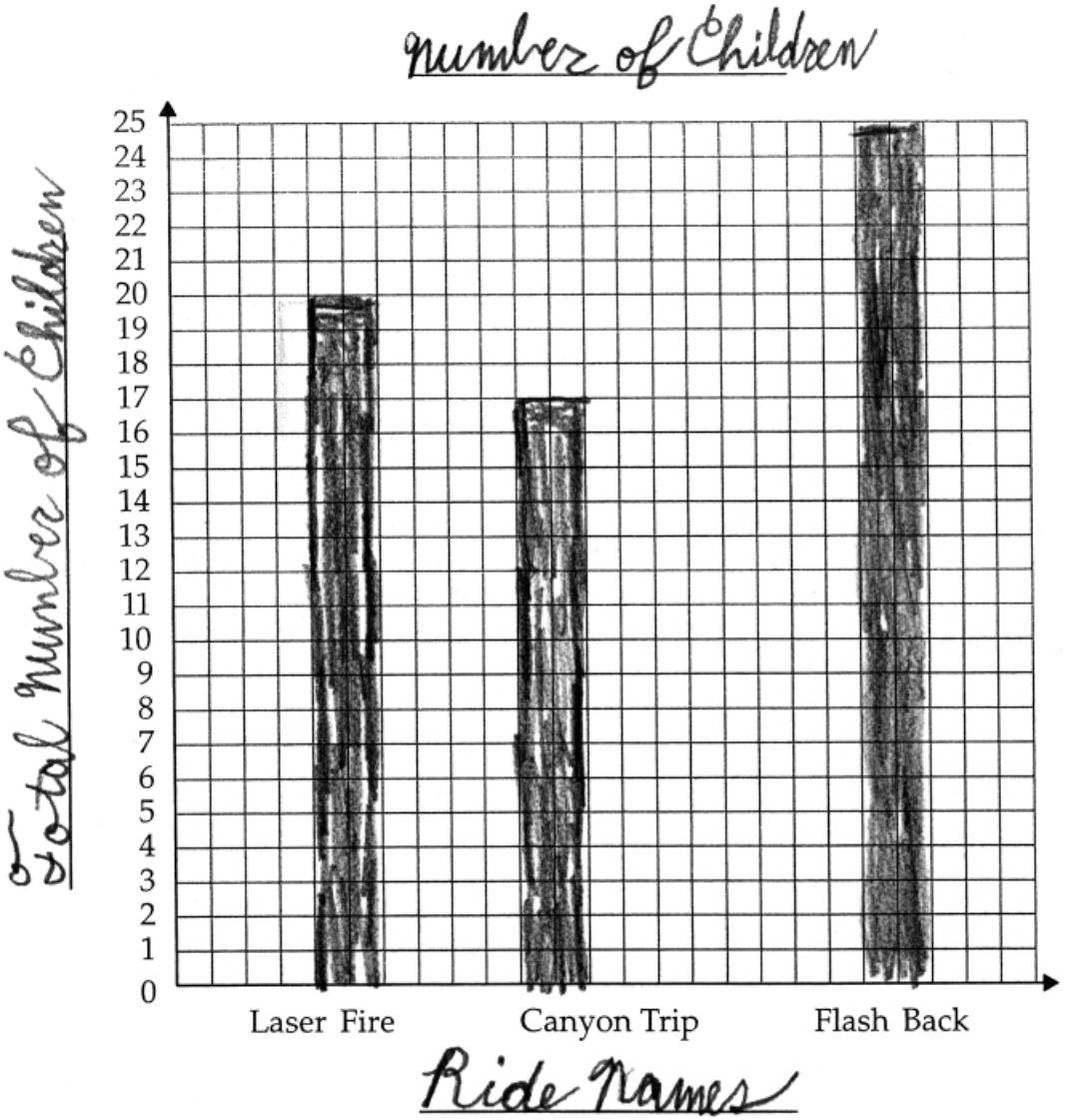
GO TO THE NEXT PAGE TO FINISH THE QUESTION.

51. ***Continued.*** Please refer to the previous page for task explanation.

B. Using your answer from **part A**, draw a bar graph that shows the total number of children who went on each ride during its first 3 runs of the day.

Be sure to:

- title the graph.
- label both axes.



The student has drawn one bar incorrectly.
The student has used correct title and labels.

E.1 Response Score: 2

51. A carnival has 3 rides for children.

A. The table below shows the number of children who went on each ride during its first 3 runs of the day.

Complete the table to show the total number of children who went on each ride during its first 3 runs of the day.

Number of Children

Rides	1st Run	2nd Run	3rd Run	Total Number of Children
Laser Fire	8	7	5	20
Canyon Trip	4	7	4	15
Flash Back	9	9	6	24

The student has given all correct answers.

GO TO THE NEXT PAGE TO FINISH THE QUESTION.

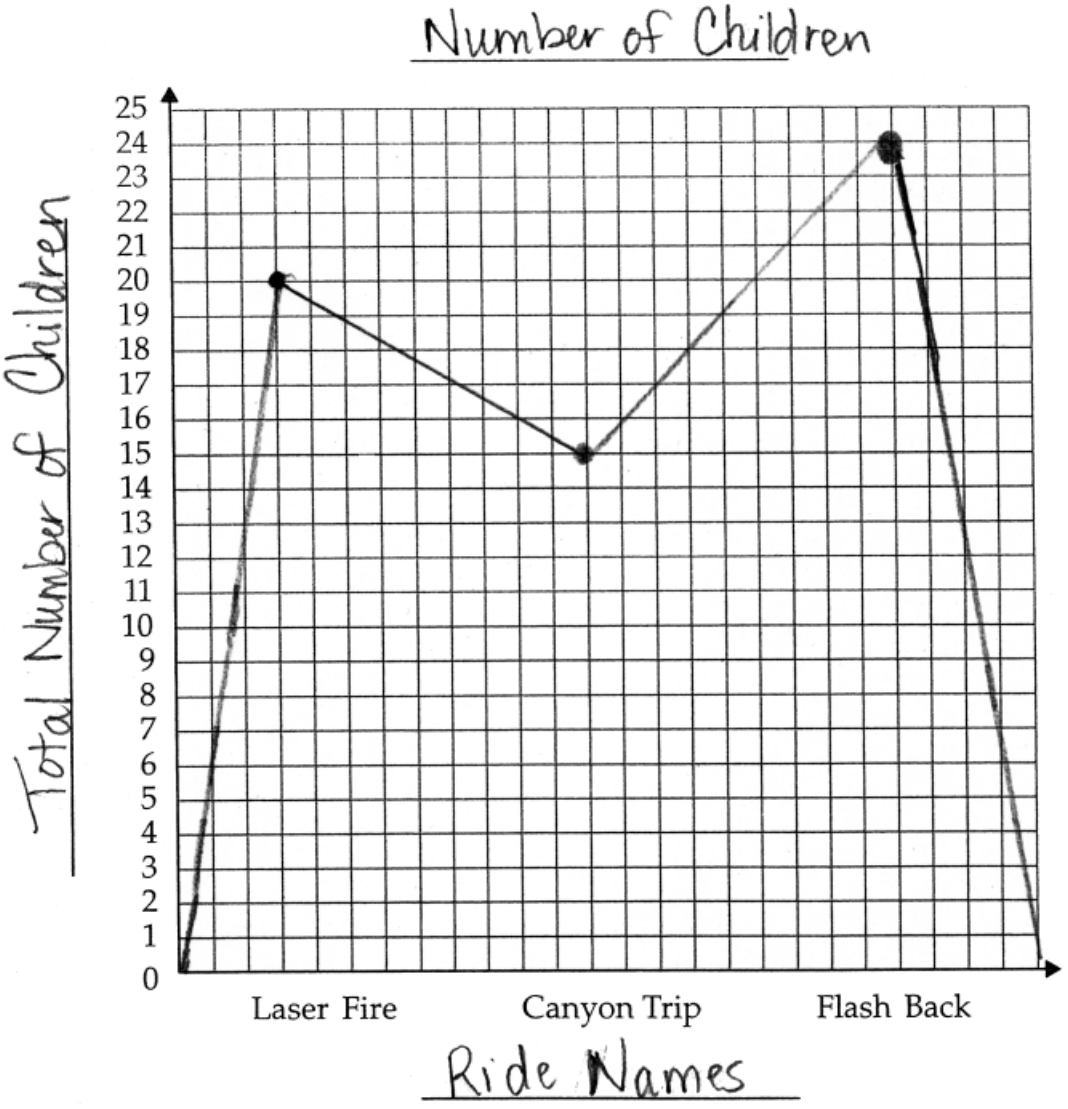
51. ***Continued.*** Please refer to the previous page for task explanation.

B. Using your answer from **part A**, draw a bar graph that shows the total number of children who went on each ride during its first 3 runs of the day.

Be sure to:

- title the graph.
- label both axes.

It looks like a roller coaster!



The student has not drawn a correct bar graph.
The student has used correct title and labels.

E.1 Response Score: 2

51. A carnival has 3 rides for children.

A. The table below shows the number of children who went on each ride during its first 3 runs of the day.

Complete the table to show the total number of children who went on each ride during its first 3 runs of the day.

Number of Children

Rides	1st Run	2nd Run	3rd Run	Total Number of Children
Laser Fire	8	7	5	20
Canyon Trip	4	7	4	15
Flash Back	9	9	6	25

The student has given an incorrect answer.

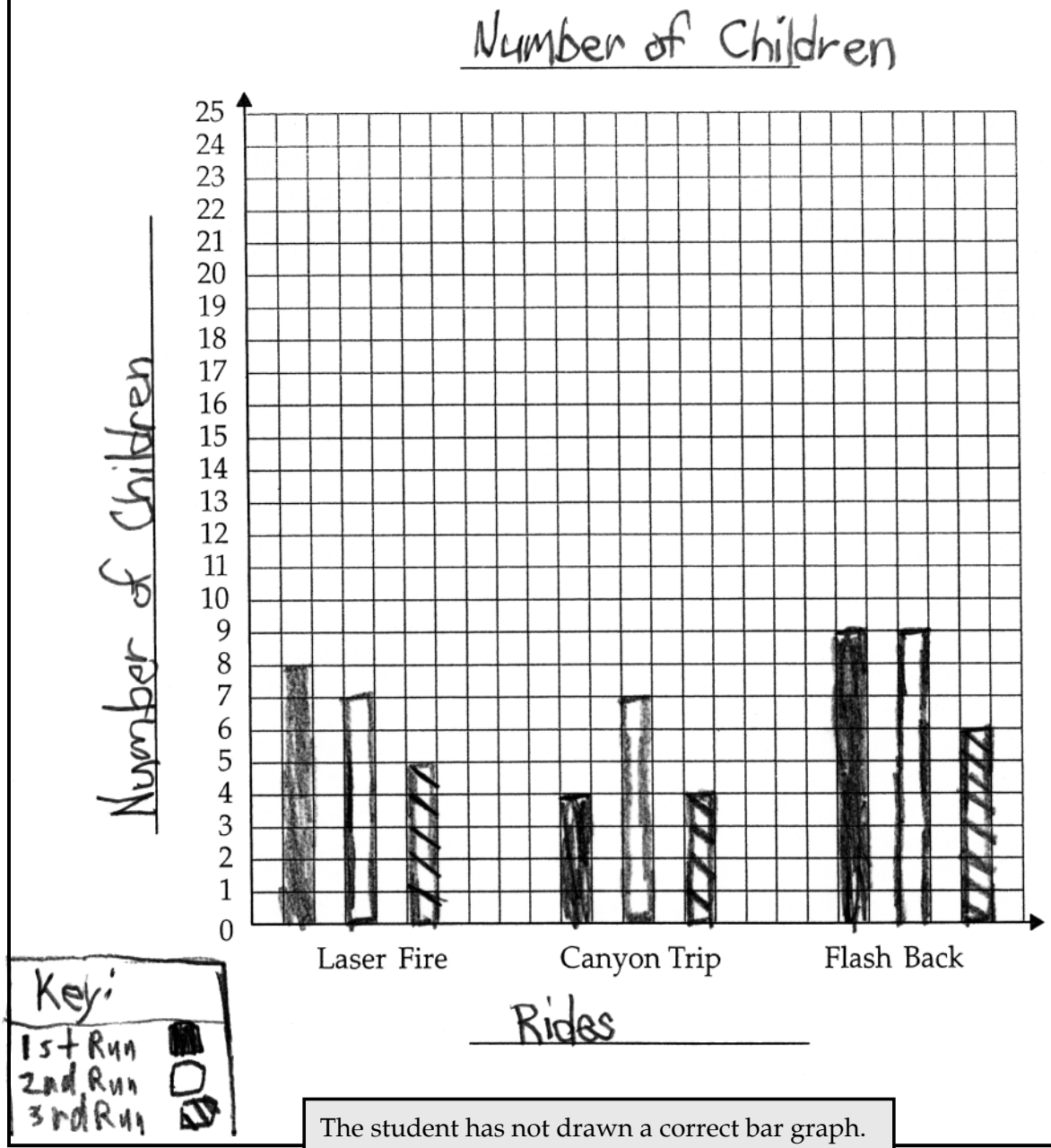
GO TO THE NEXT PAGE TO FINISH THE QUESTION.

51. ***Continued.*** Please refer to the previous page for task explanation.

B. Using your answer from **part A**, draw a bar graph that shows the total number of children who went on each ride during its first 3 runs of the day.

Be sure to:

- title the graph.
- label both axes.



The student has not drawn a correct bar graph.
The student has used correct title and labels.

E.1 Response Score: 1

51. A carnival has 3 rides for children.

A. The table below shows the number of children who went on each ride during its first 3 runs of the day.

Complete the table to show the total number of children who went on each ride during its first 3 runs of the day.

Number of Children

Rides	1st Run	2nd Run	3rd Run	Total Number of Children
Laser Fire	8	7	5	20
Canyon Trip	4	7	4	15
Flash Back	9	9	6	24

The student has given all correct answers.

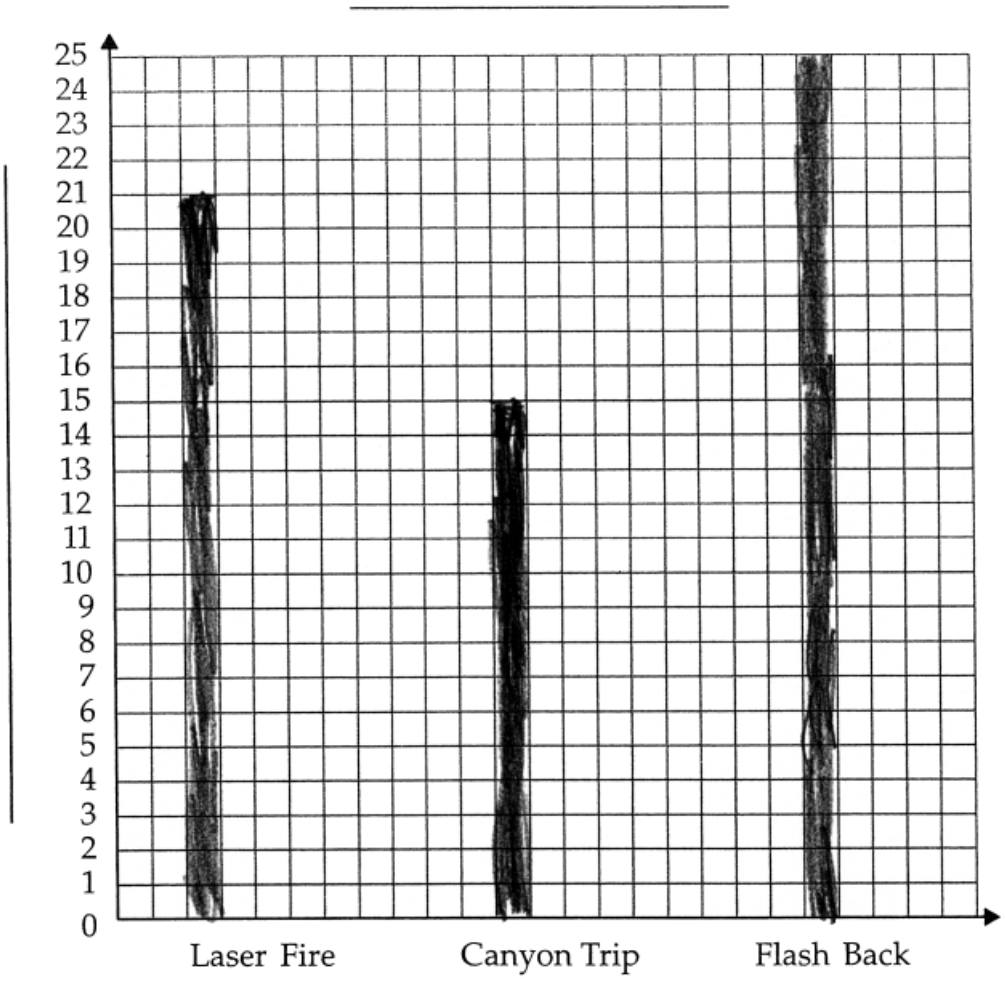
GO TO THE NEXT PAGE TO FINISH THE QUESTION.

51. ***Continued.*** Please refer to the previous page for task explanation.

B. Using your answer from **part A**, draw a bar graph that shows the total number of children who went on each ride during its first 3 runs of the day.

Be sure to:

- title the graph.
- label both axes.



The student has drawn a bar graph with one correct bar height. The student has not used a title or labels.

E.1 Response Score: 1

51. A carnival has 3 rides for children.

A. The table below shows the number of children who went on each ride during its first 3 runs of the day.

Complete the table to show the total number of children who went on each ride during its first 3 runs of the day.

Number of Children

Rides	1st Run	2nd Run	3rd Run	Total Number of Children
Laser Fire	8	7	5	20
Canyon Trip	4	7	4	15
Flash Back	9	9	6	24
	21	23	15	

The student has given all correct answers.

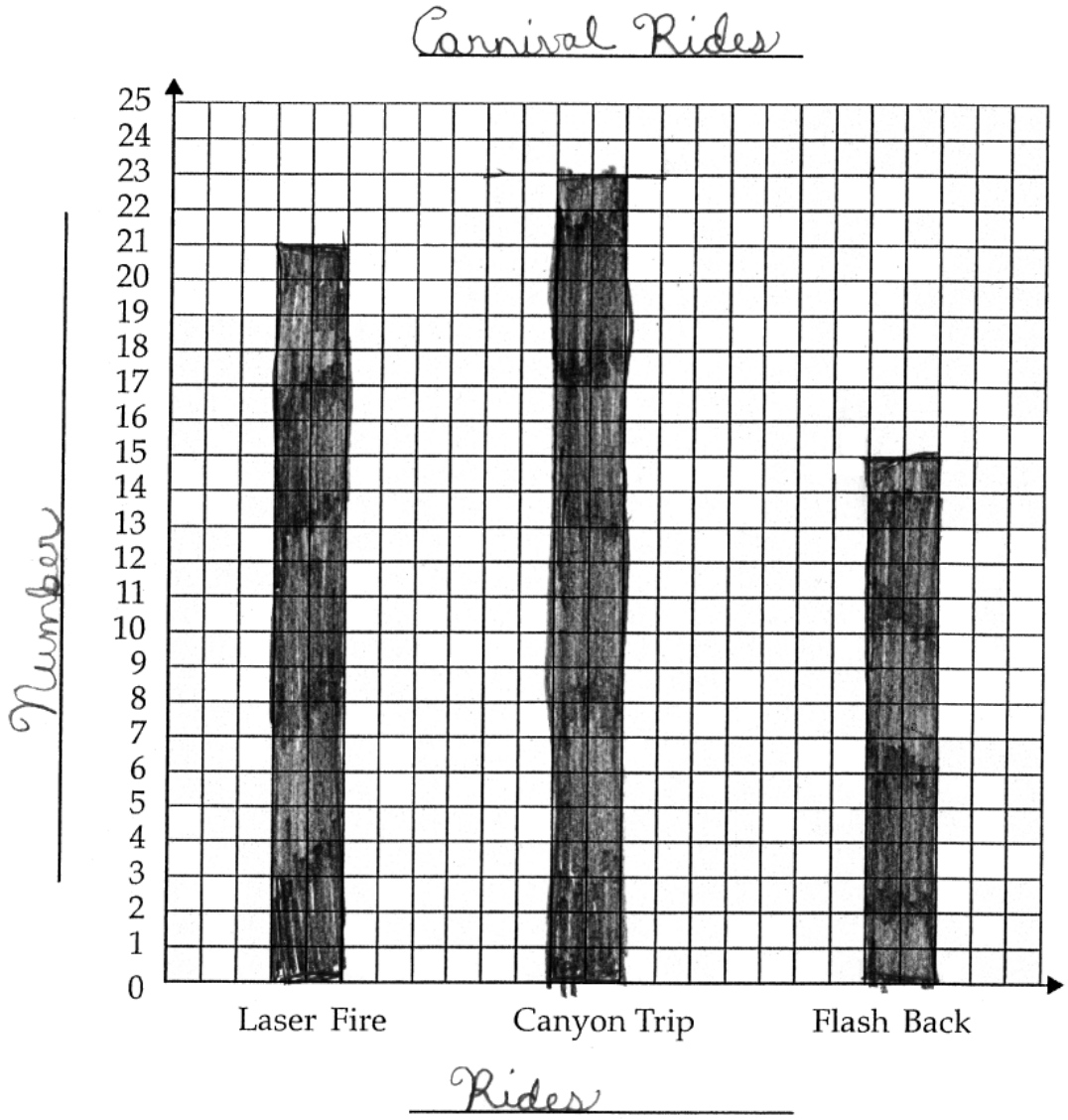
GO TO THE NEXT PAGE TO FINISH THE QUESTION.

51. ***Continued.*** Please refer to the previous page for task explanation.

B. Using your answer from **part A**, draw a bar graph that shows the total number of children who went on each ride during its first 3 runs of the day.

Be sure to:

- title the graph.
- label both axes.



The student has drawn a bar graph with incorrect bar heights. The student has used one correct label.

E.1 Response Score: 0

51. A carnival has 3 rides for children.

A. The table below shows the number of children who went on each ride during its first 3 runs of the day.

Complete the table to show the total number of children who went on each ride during its first 3 runs of the day.

Number of Children

Rides	1st Run	2nd Run	3rd Run	Total Number of Children
Laser Fire	8	7	5	280
Canyon Trip	4	7	4	112
Flash Back	9	9	6	486

8 × 7 = 56; 56 × 5 = 280

4 × 7 = 28; 28 × 4 = 112

9 × 9 = 81; 81 × 6 = 486

I + asked for the total, so I multiplied all the numbers to get the total

The student has given no correct answers.

GO TO THE NEXT PAGE TO FINISH THE QUESTION.

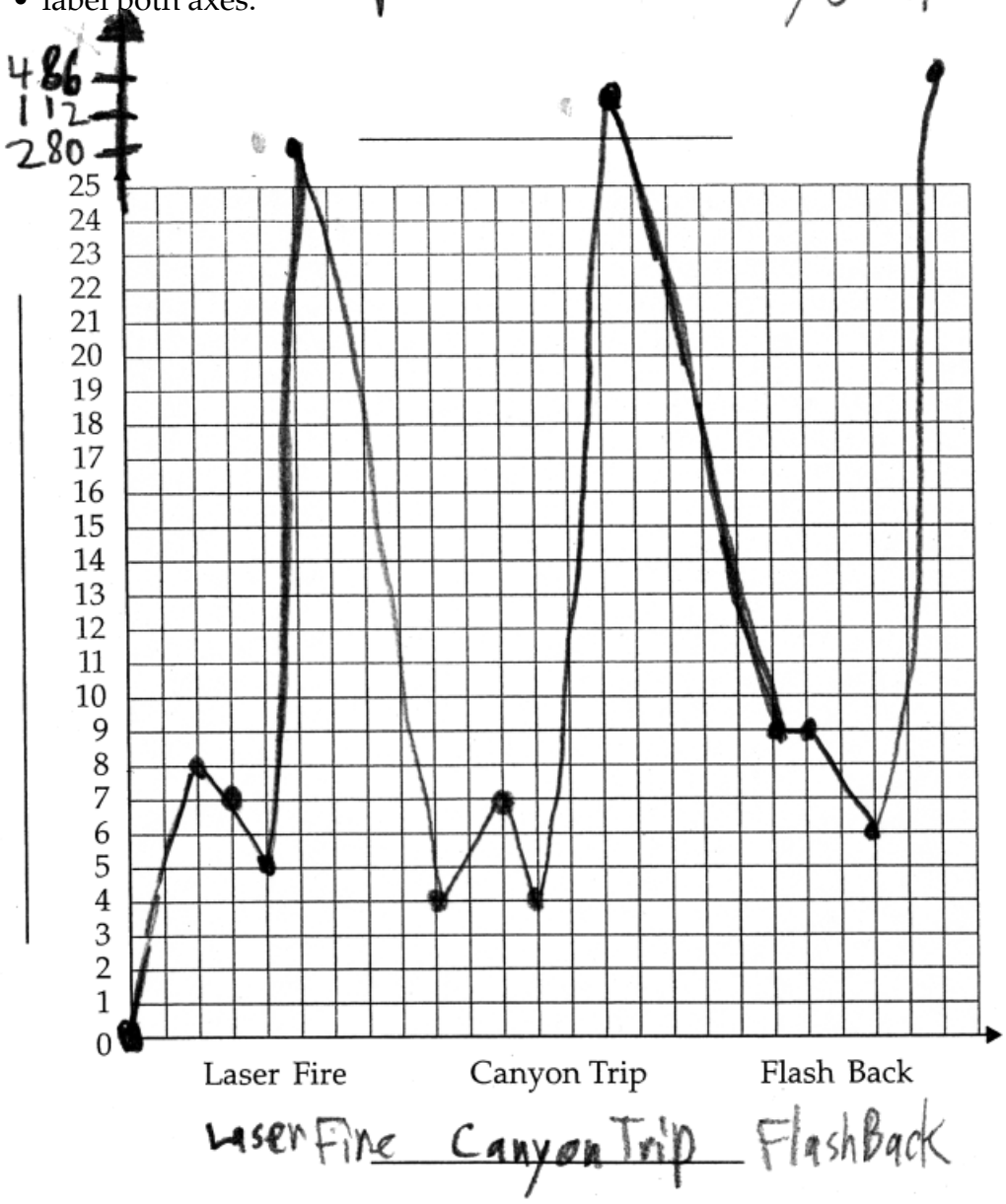
51. ***Continued.*** Please refer to the previous page for task explanation.

B. Using your answer from **part A**, draw a bar graph that shows the total number of children who went on each ride during its first 3 runs of the day.

Be sure to:

- title the graph.
- label both axes.

I took the data and plotted it on my graph.

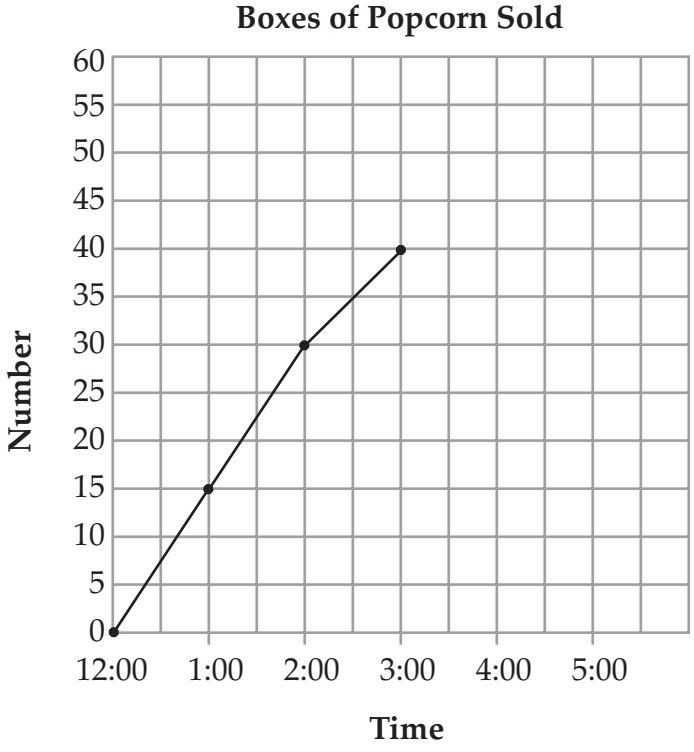


The student has not drawn a correct bar graph.
The student has not used correct title and labels.

THIRD OPEN-ENDED ITEM

E.1

52. Leo sold popcorn at the basketball game on Saturday. He made the line graph below to show how much he sold.



A. By 4:00 P.M. Leo had sold 45 boxes of popcorn. Complete the line graph to show this.

B. Using the line graph, how many boxes of popcorn were sold by 2:00 P.M.?

GO TO THE NEXT PAGE TO FINISH THE QUESTION.

52. ***Continued.*** Please refer to the previous page for task explanation.

Leo made a table to show the number of boxes and the kind of popcorn he had sold on Saturday by 4:00 P.M.

Popcorn Sold on Saturday

Kind	Number of Boxes
butter	25
plain	20

C. Using the key below, fill in the pictograph to show the data in the table. Explain how to find the number of squares to draw in the pictograph.

Popcorn Sold on Saturday

Kind	Number of Boxes

Key
☐ = 5 boxes

ITEM-SPECIFIC SCORING GUIDELINE

Item #52

This item will be reported under Category E, Data Analysis and Probability.

Assessment Anchor:

E.1–Formulate or answer questions that can be addressed with data and/or organize, display, interpret, or analyze data.

Specific Eligible Content addressed by this item:

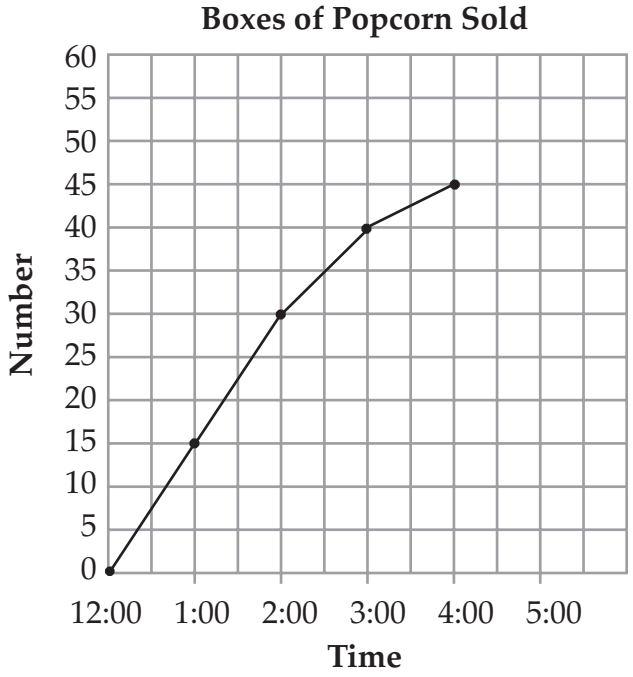
E.1.1.1–Display and/or interpret data shown in tallies, tables, charts, pictographs, bar graphs, or line graphs using a title, appropriate scale, and labels. A grid will be provided to display data on bar graphs or line graphs.

Scoring Guide:

Score	In response to this item, the student—
4	demonstrates a thorough understanding of displaying data in a line graph and pictograph and interpreting data shown in a table by correctly solving problems and clearly explaining procedures.
3	demonstrates a general understanding of displaying data in a line graph and pictograph and interpreting data shown in a table with only minor errors or omissions.
2	demonstrates a partial understanding of displaying data in a line graph and pictograph and interpreting data shown in a table by performing a significant portion of the required task.
1	demonstrates minimal understanding of displaying data in a line graph and pictograph and interpreting data shown in a table.
0	The response has given no correct answer and insufficient evidence to demonstrate any understanding of the mathematical concepts and procedures as required by the task. Response may show only information copied from the question.
Non-scorable	BLK (blank)... Blank, entirely erased, or written refusal to respond OT.....Off task IL.....Illegible LOE.....Response in a language other than English

Top Scoring Response:

Part A Graph



(1 score point)

1 point for correct point (4:00 P.M., 45) and line segment

Part B Answer

30 boxes of popcorn were sold by 2:00 P.M.

(1 score point)

1 point for correct answer

Part C Graph and Support

Popcorn Sold on Saturday

Kind	Number of Boxes
butter	□ □ □ □ □
plain	□ □ □ □

Key
□ = 5 boxes

Since 25 ÷ 5 = 5, I knew to draw 5 squares for butter.
Since 20 ÷ 5 = 4, I knew to draw 4 squares for plain.

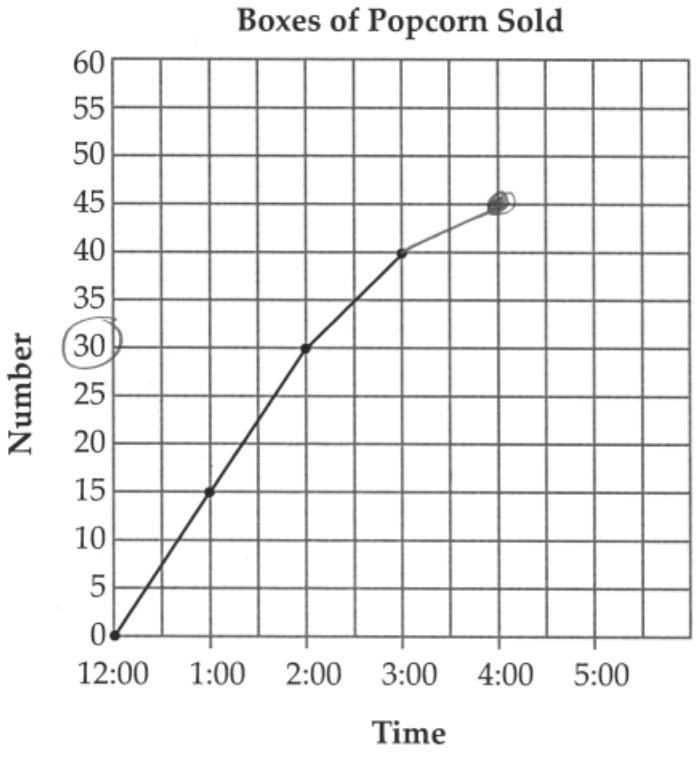
(2 score points)

1 point for correct pictograph and labels
1 point for complete support

OPEN-ENDED ITEM RESPONSES

E.1 Response Score: 4

52. Leo sold popcorn at the basketball game on Saturday. He made the line graph below to show how much he sold.



A. By 4:00 P.M. Leo had sold 45 boxes of popcorn. Complete the line graph to show this.

The student has correctly completed the line graph.

B. Using the line graph, how many boxes of popcorn were sold by 2:00 P.M.?

30 boxes of popcorn

The student has given a correct answer.

GO TO THE NEXT PAGE TO FINISH THE QUESTION.

52. ***Continued.*** Please refer to the previous page for task explanation.

Leo made a table to show the number of boxes and the kind of popcorn he had sold on Saturday by 4:00 P.M.

Popcorn Sold on Saturday

Kind	Number of Boxes
butter	25
plain	20

C. Using the key below, fill in the pictograph to show the data in the table. Explain how to find the number of squares to draw in the pictograph.

Popcorn Sold on Saturday

Kind	Number of Boxes
butter	□ □ □ □ □
plain	□ □ □ □

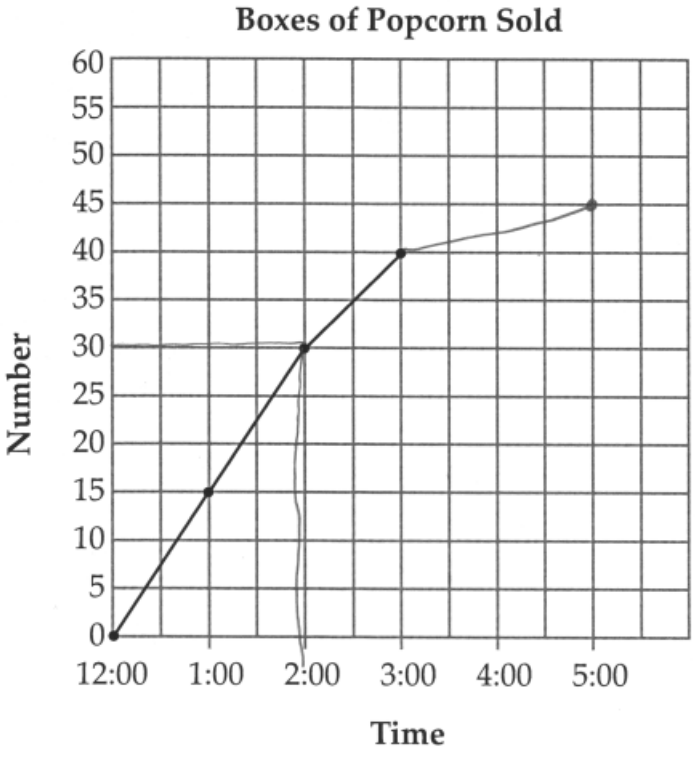
Key
□ = 5 boxes

Since each box = 5, so
25 ÷ 5 = 5
20 ÷ 5 = 4
so that how many boxes!

The student has correctly completed the pictograph including labels. The student has shown complete support.

E.1 Response Score: 3

52. Leo sold popcorn at the basketball game on Saturday. He made the line graph below to show how much he sold.



A. By 4:00 P.M. Leo had sold 45 boxes of popcorn. Complete the line graph to show this.

The student has incorrectly completed the line graph.

B. Using the line graph, how many boxes of popcorn were sold by 2:00 P.M.?

30 BOXES

The student has given a correct answer.

GO TO THE NEXT PAGE TO FINISH THE QUESTION.

52. ***Continued.*** Please refer to the previous page for task explanation.

Leo made a table to show the number of boxes and the kind of popcorn he had sold on Saturday by 4:00 P.M.

Popcorn Sold on Saturday

Kind	Number of Boxes
butter	25
plain	20

C. Using the key below, fill in the pictograph to show the data in the table. Explain how to find the number of squares to draw in the pictograph.

Popcorn Sold on Saturday

Kind	Number of Boxes
butter	
plain	

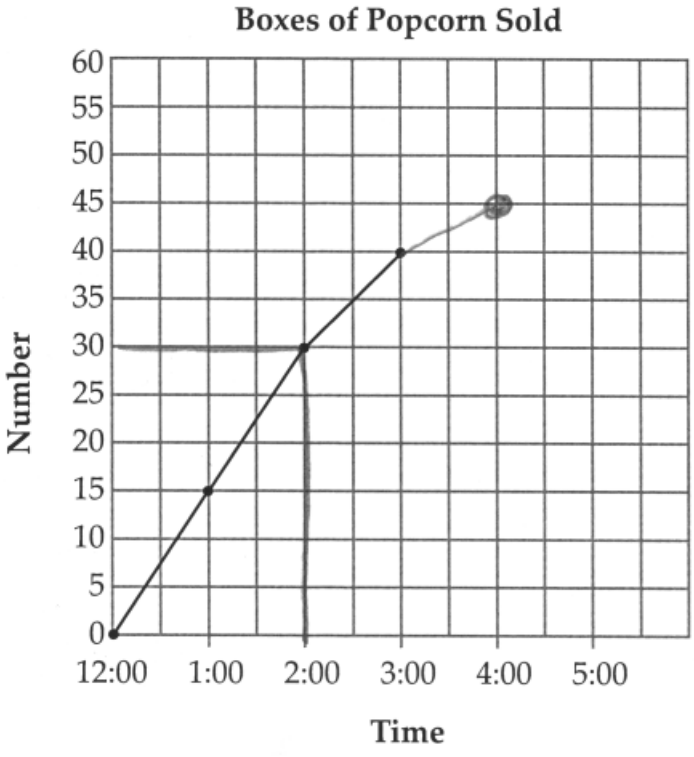
Key
□ = 5 boxes

I divided the 25 and 20 by 5 boxes.

The student has correctly completed the pictograph including labels. The student has shown complete support.

E.1 Response Score: 3

52. Leo sold popcorn at the basketball game on Saturday. He made the line graph below to show how much he sold.



A. By 4:00 P.M. Leo had sold 45 boxes of popcorn. Complete the line graph to show this.

The student has correctly completed the line graph.

B. Using the line graph, how many boxes of popcorn were sold by 2:00 P.M.?

30

The student has given a correct answer.

GO TO THE NEXT PAGE TO FINISH THE QUESTION.

52. ***Continued.*** Please refer to the previous page for task explanation.

Leo made a table to show the number of boxes and the kind of popcorn he had sold on Saturday by 4:00 P.M.

Popcorn Sold on Saturday

Kind	Number of Boxes
butter	25
plain	20

C. Using the key below, fill in the pictograph to show the data in the table. Explain how to find the number of squares to draw in the pictograph.

Popcorn Sold on Saturday

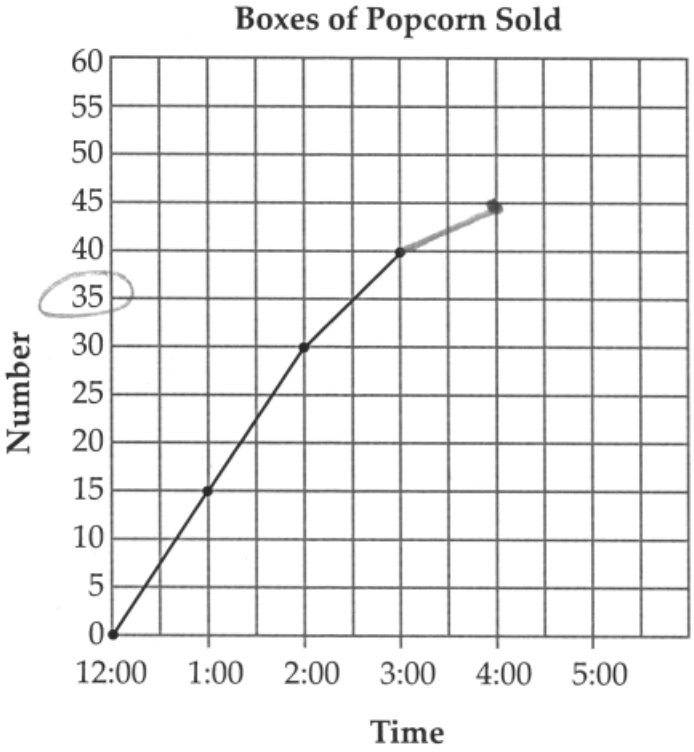
Kind	Number of Boxes
butter	
plain	

Key
☐ = 5 boxes

The student has correctly completed the pictograph including labels. The student has shown no support.

E.1 Response Score: 2

52. Leo sold popcorn at the basketball game on Saturday. He made the line graph below to show how much he sold.



A. By 4:00 P.M. Leo had sold 45 boxes of popcorn. Complete the line graph to show this.

The student has correctly completed the line graph.

B. Using the line graph, how many boxes of popcorn were sold by 2:00 P.M.?

The student has given an incorrect answer.

GO TO THE NEXT PAGE TO FINISH THE QUESTION.

52. ***Continued.*** Please refer to the previous page for task explanation.

Leo made a table to show the number of boxes and the kind of popcorn he had sold on Saturday by 4:00 P.M.

Popcorn Sold on Saturday

Kind	Number of Boxes
butter	25
plain	20

C. Using the key below, fill in the pictograph to show the data in the table. Explain how to find the number of squares to draw in the pictograph.

Popcorn Sold on Saturday

Kind	Number of Boxes

Key
☐ = 5 boxes

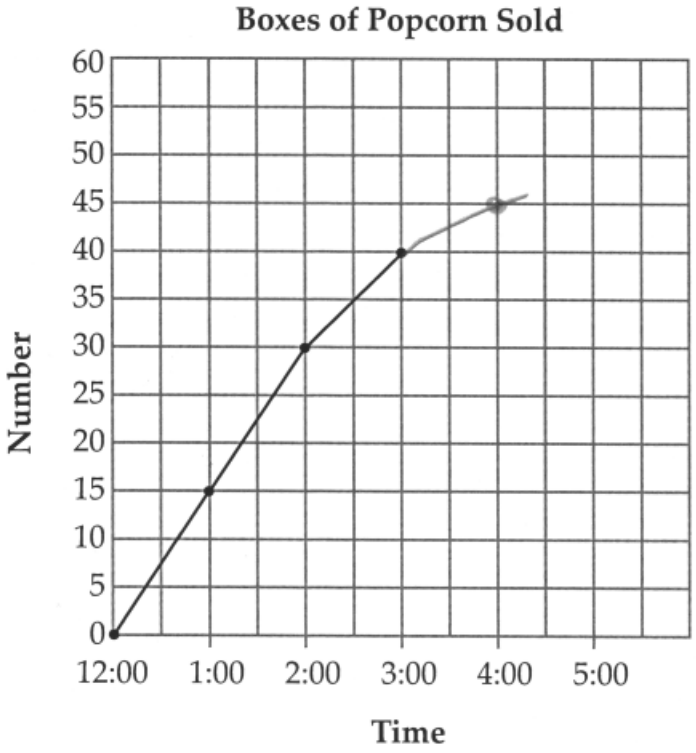
you take $5\overline{)25}$ = 5 ☐

and $5\overline{)20}$ = 4 ☐

The student has not completed the pictograph or shown labels. The student has shown complete support.

E.1 Response Score: 2

52. Leo sold popcorn at the basketball game on Saturday. He made the line graph below to show how much he sold.



A. By 4:00 P.M. Leo had sold 45 boxes of popcorn. Complete the line graph to show this.

The student has correctly completed the line graph.

B. Using the line graph, how many boxes of popcorn were sold by 2:00 P.M.?

30

The student has given a correct answer.

GO TO THE NEXT PAGE TO FINISH THE QUESTION.

52. ***Continued.*** Please refer to the previous page for task explanation.

Leo made a table to show the number of boxes and the kind of popcorn he had sold on Saturday by 4:00 P.M.

Popcorn Sold on Saturday

Kind	Number of Boxes
butter	25
plain	20

C. Using the key below, fill in the pictograph to show the data in the table. Explain how to find the number of squares to draw in the pictograph.

Popcorn Sold on Saturday

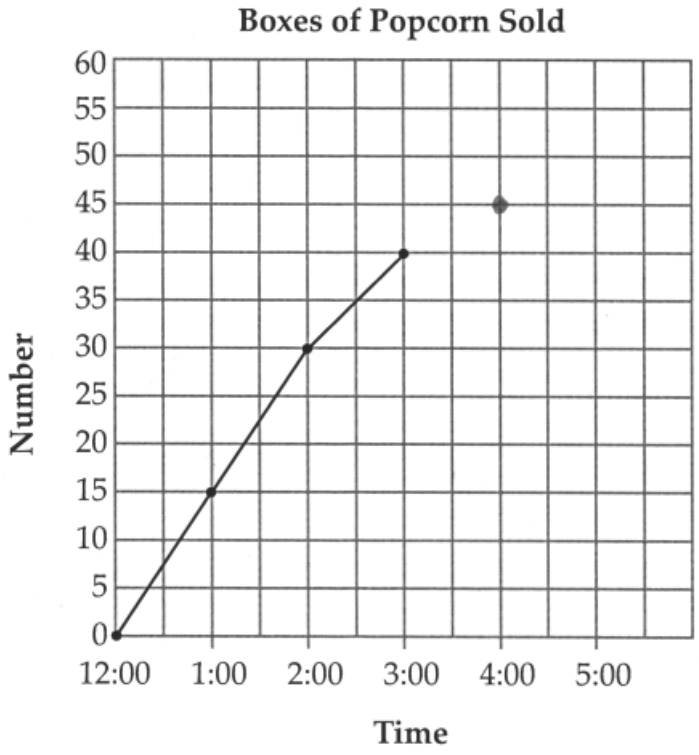
Kind	Number of Boxes
butter	
plain	

Key
☐ = 5 boxes

The student has incorrectly completed the pictograph. The student has shown no support.

E.1 Response Score: 1

52. Leo sold popcorn at the basketball game on Saturday. He made the line graph below to show how much he sold.



A. By 4:00 P.M. Leo had sold 45 boxes of popcorn. Complete the line graph to show this.

The student has incorrectly completed the line graph.

B. Using the line graph, how many boxes of popcorn were sold by 2:00 P.M.?

30

The student has given a correct answer.

GO TO THE NEXT PAGE TO FINISH THE QUESTION.

52. ***Continued.*** Please refer to the previous page for task explanation.

Leo made a table to show the number of boxes and the kind of popcorn he had sold on Saturday by 4:00 P.M.

Popcorn Sold on Saturday

Kind	Number of Boxes
butter	25
plain	20

C. Using the key below, fill in the pictograph to show the data in the table. Explain how to find the number of squares to draw in the pictograph.

Popcorn Sold on Saturday

Kind	Number of Boxes

Key
☐ = 5 boxes

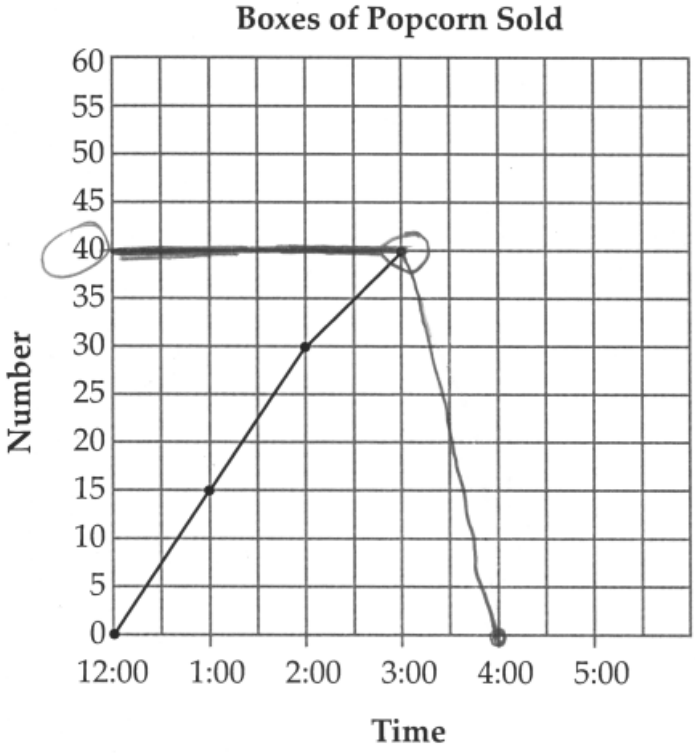
He sold 25 boxes of butter

He sold 20 boxes of plain

The student has not completed the pictograph or shown labels. The student has shown incorrect support.

E.1 Response Score: 1

52. Leo sold popcorn at the basketball game on Saturday. He made the line graph below to show how much he sold.



A. By 4:00 P.M. Leo had sold 45 boxes of popcorn. Complete the line graph to show this.

The student has incorrectly completed the line graph.

B. Using the line graph, how many boxes of popcorn were sold by 2:00 P.M.?

40

The student has given an incorrect answer.

GO TO THE NEXT PAGE TO FINISH THE QUESTION.

52. ***Continued.*** Please refer to the previous page for task explanation.

Leo made a table to show the number of boxes and the kind of popcorn he had sold on Saturday by 4:00 P.M.

Popcorn Sold on Saturday

Kind	Number of Boxes
butter	25
plain	20

C. Using the key below, fill in the pictograph to show the data in the table. Explain how to find the number of squares to draw in the pictograph.

Popcorn Sold on Saturday

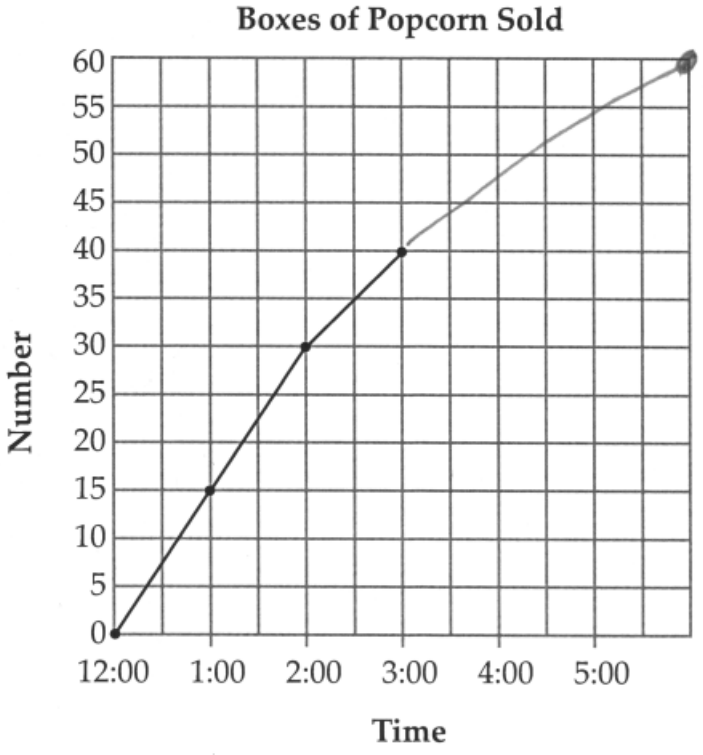
Kind	Number of Boxes
butter	
plain	

Key
☐ = 5 boxes

The student has correctly completed the pictograph including labels. The student has shown no support.

E.1 Response Score: 0

52. Leo sold popcorn at the basketball game on Saturday. He made the line graph below to show how much he sold.



A. By 4:00 P.M. Leo had sold 45 boxes of popcorn. Complete the line graph to show this.

The student has incorrectly completed the line graph.

B. Using the line graph, how many boxes of popcorn were sold by 2:00 P.M.?

Leo sold all popcorn

The student has given an incorrect answer.

GO TO THE NEXT PAGE TO FINISH THE QUESTION.

52. ***Continued.*** Please refer to the previous page for task explanation.

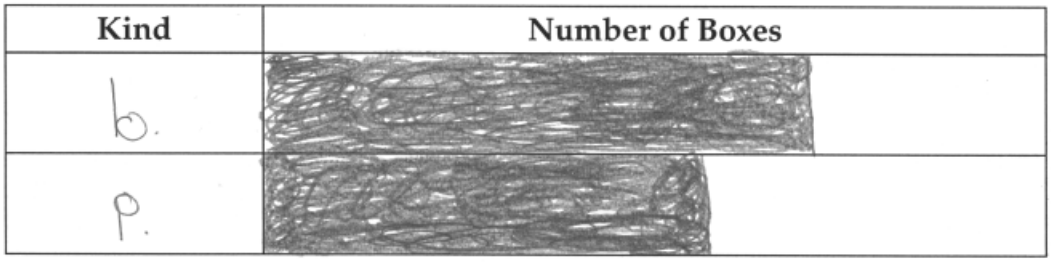
Leo made a table to show the number of boxes and the kind of popcorn he had sold on Saturday by 4:00 P.M.

Popcorn Sold on Saturday

Kind	Number of Boxes
butter	25
plain	20

C. Using the key below, fill in the pictograph to show the data in the table. Explain how to find the number of squares to draw in the pictograph.

Popcorn Sold on Saturday



Key
☐ = 5 boxes

The student has incorrectly completed the pictograph. The student has shown no support.

Mathematics
Grade 5
Item and Scoring Sampler