



RELEASED ITEMS

**MATHEMATICS
GRADE 8**

Fall 2006

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MEAP GRADE 8 MATHEMATICS TEST

Reference Sheet

Use this information as needed to answer questions on the MEAP Grade 8 Test.

Miscellaneous

Distance = rate \times time

Interest = principal \times rate \times time

$$\pi \approx 3.14$$

Algebra

Straight Line: $y = mx + b$

If (x_1, y_1) and (x_2, y_2) are on a line, then

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Area



Triangle:

$$A = \frac{1}{2}(\text{base}) \times \text{height}$$



Rectangle:

$$A = \text{base} \times \text{height}$$



Trapezoid:

$$A = \frac{1}{2}(\text{sum of the bases}) \times \text{height}$$



Parallelogram:

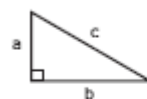
$$A = \text{base} \times \text{height}$$









Circle:

$$A = \pi r^2 \quad \text{Circumference} = 2\pi r = \pi d$$

Right Triangles



$$a^2 + b^2 = c^2$$

Total Surface Area		Volume	
Cylinder:	SA = circumference of the base \times height + $2\pi r^2$		$V = \pi r^2 \times \text{height}$
Cube:	SA = $6 \times (\text{length of edge})^2$		$V = (\text{length of edge})^3$
Pyramid:	SA = $\frac{1}{2}$ (perimeter of base) \times (slant height) + area of the base		$V = \frac{1}{3}$ (area of base) \times (altitude)
Sphere:	SA = $4\pi r^2$		$V = \frac{4}{3} \pi r^3$
Cone:	SA = $\frac{1}{2}$ (circumference of base) \times (slant height) + πr^2		$V = \frac{1}{3} \pi r^2 \times \text{height}$
Prism:	SA = sum of the area of the faces		$V = \text{area of base} \times \text{height}$

PART 1

DIRECTIONS

This test has three parts. You may **NOT** use a calculator on the first part. You may use open space in this test booklet for scratch paper. No additional sheets may be used.

There are two types of items on this test: multiple-choice and open-ended.

1. Multiple-choice items will require you to choose the best answer from among four answer choices. For these items, use only a No. 2 pencil to mark your answer in your **Answer Document**. If you erase an answer, be sure to erase it completely. If you skip an item, be sure to mark the answer to the next item in the correct place in your **Answer Document**.
2. One open-ended item will be found in your test booklet and require you to write, explain, or show your work. For this item, show all of your work neatly and clearly in the space provided in your **Answer Document**.

Sample Multiple-Choice Item:

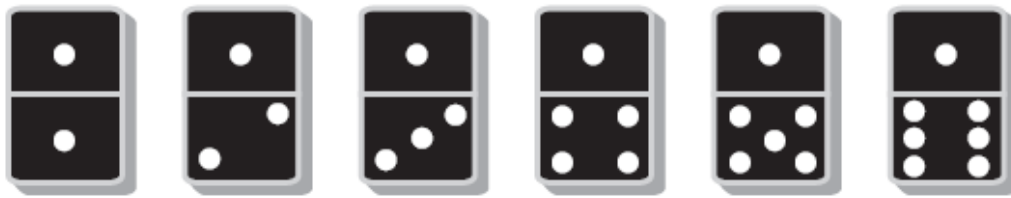
Marty wants to put 75 CDs into cases. Each case holds exactly 8 CDs. What is the *least* number of cases that Marty will need to hold all his CDs?

- A 8
- B 9
- C 10
- D 11

For this sample item, the correct answer is **C**. Circle **C** is filled in on the sample item in your **Answer Document**.

Sample Open-Ended Item:

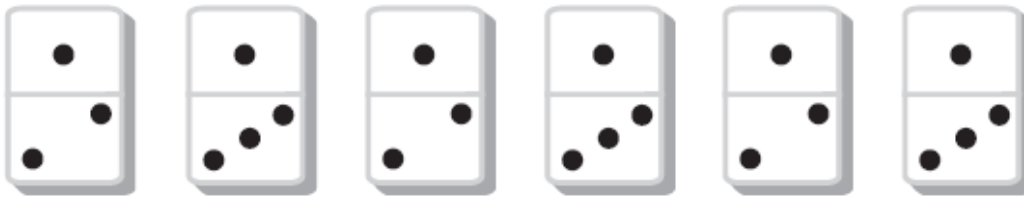
Solve the following problem.



- A What pattern do these dominoes display?

They all have one on top. At the bottom it starts with one and keeps adding one until it reaches six.

- B Draw another domino pattern different from the one above.



- C Describe the pattern you drew.

**On the first, third, and fifth dominoes, I drew one on top and two on bottom.
On the second, fourth, and sixth, I put one on top and three on the bottom.**

For this sample item, you would answer Part A by explaining that they all have one on top. At the bottom it starts with one and keeps adding one on each consecutive domino. For Part B, you would draw a different domino pattern than the one above. Remember to show your work. For Part C, you would explain or describe the pattern you drew.

You will have at least 30 minutes to finish Part 1 of this test. You will be given additional time if necessary.

1. Once you have reached the word **STOP** in your test booklet, do **NOT** go on to the next page.
2. If you finish early, you may check your work in Part 1 of the test **ONLY**. Do **NOT** look at items in other parts of the test.

If you do not understand any of these directions, please raise your hand.

- 1 A store manager keeps a record of his inventory by adding a positive number whenever he receives a delivery and adding a negative number whenever he makes a sale. Below is an expression showing his records for one week. What is the value of the expression?

$$\begin{array}{r} +50 \\ -6 \\ -4 \\ +5 \\ + \quad -20 \\ \hline \end{array}$$

- A 15
B 20
C 25
D 85
- 2 Which expression is equal to -0.25 ?

- A $-1 - 0.75$
B -0.5×0.5
C $-3.25 + 3.5$
D $-1 \div -4$

- 3 Four students were playing a math game. They had to solve the equation below.

$$-4 + 2 \times (-3) \times (-5) = n$$

Alice answered $n = -30$
Brian answered $n = -10$
Cindy answered $n = 26$
David answered $n = 90$

Which student had the correct answer?

- A Alice
B Brian
C Cindy
D David

- 4 Mary is buying 3 computer games for \$19.99 each and one box of blank disks for \$4.95. The sales tax is 6%. Which is closest to the amount she must pay for all the items, including tax?
- A \$60
 - B \$64
 - C \$65
 - D \$68
- 5 Alice is buying carpet. The carpet is sold by the square yard. The carpet she chooses costs \$19.95 per square yard. The size of her room is $9\frac{1}{2}$ feet by $11\frac{1}{2}$ feet. Which is *closest* to how much the carpet costs?
- A \$ 120
 - B \$ 240
 - C \$1,100
 - D \$2,100
- 6 A cube has edges that are 11.9 inches in length. Which is closest to the volume of the cube in cubic feet?
- A 0.5 cubic foot
 - B 1 cubic foot
 - C 1.5 cubic feet
 - D 144 cubic feet

PART 2

DIRECTIONS

You will now begin Part 2 of this test. You may use a calculator on this part of the test, and you may use open space in this test booklet for scratch paper. No additional sheets may be used.

If you finish early, you may check your work for Part 2 **ONLY**.

Do **NOT** look at items in other parts of this test.

You will have at least 50 minutes to finish Part 2 of this test.

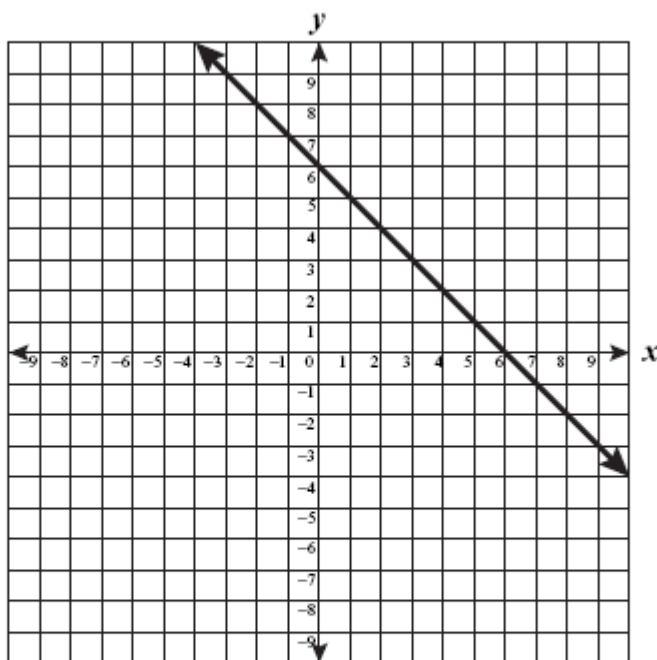
- 7 A worker can assemble a maximum of 125 boxes in 5 hours. What is the maximum rate that can be achieved by 3 workers?
- A 25 boxes per hour
 - B 75 boxes per hour
 - C 125 boxes per hour
 - D 375 boxes per hour
- 8 Larry drove his car 100 miles to see a football game. Then he drove 100 miles home after the game. When he left for the game, he had exactly 12 gallons of gas in his tank. When he returned home after the game, he had exactly 4 gallons. What was the gas mileage of Larry's car, in miles per gallon if he did not stop for gas?
- A 8.33 miles per gallon
 - B 12.50 miles per gallon
 - C 16.66 miles per gallon
 - D 25.00 miles per gallon
- 9 Two cities are 60 miles apart. Kip drove from one city to the other in 1 hour. Because of traffic, it took Kip 2 hours for the return trip. What was the average speed for the entire trip?
- A 30 miles per hour
 - B 40 miles per hour
 - C 45 miles per hour
 - D 120 miles per hour

- 10** A butcher shop is selling steak for \$4.00 per pound. What is the cost per ounce?
- A** \$0.25
 - B** \$0.33
 - C** \$0.40
 - D** \$0.64
- 11** A recipe calls for 1 cup of strawberries per pint of yogurt. How many cups of strawberries would be needed per gallon of yogurt?
- A** 4
 - B** 8
 - C** 16
 - D** 32
- 12** A car is traveling at a rate of 44 feet per second. Which best represents this speed in miles per hour?
- A** 15.8
 - B** 30
 - C** 60
 - D** 64.5

- 13 Which of the following equations matches the values in the chart below?

x	y
1	3
2	5
5	11
7	15

- A $y = 3x$
- B $y = 2x + 1$
- C $y = 3x + 1$
- D $y = 5x - 2$
- 14 When asked to give the equation for the following line, four students gave different responses. Who correctly matched an equation with the graph?



- A Alice: $y = -x$
- B Bert: $y = -x + 6$
- C Carrie: $y = x$
- D Don: $y = x + 6$

15 Which of the following equations states that y is directly proportional to x ?

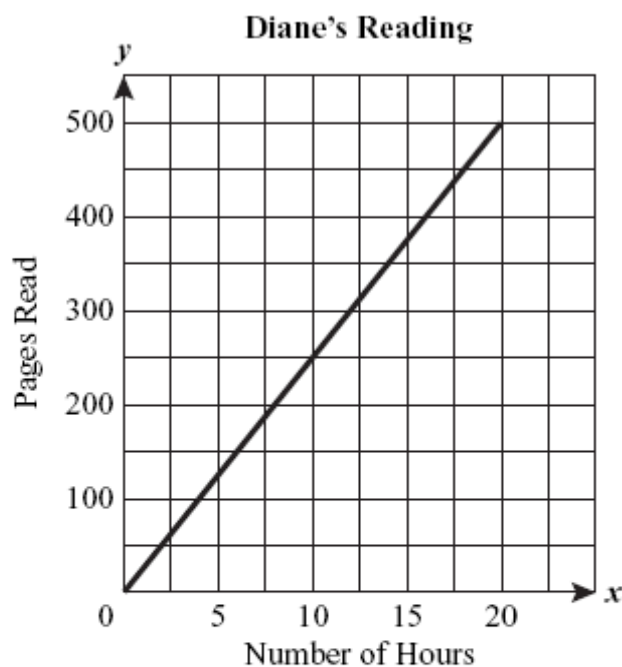
A $y = 1.5x$

B $y + 5 = 2x$

C $\frac{y}{2} - 3 = x$

D $y = x + 1$

16 Diane made a graph of the time it took her to read a 500-page book.



How many hours did it take her to read the first 300 pages?

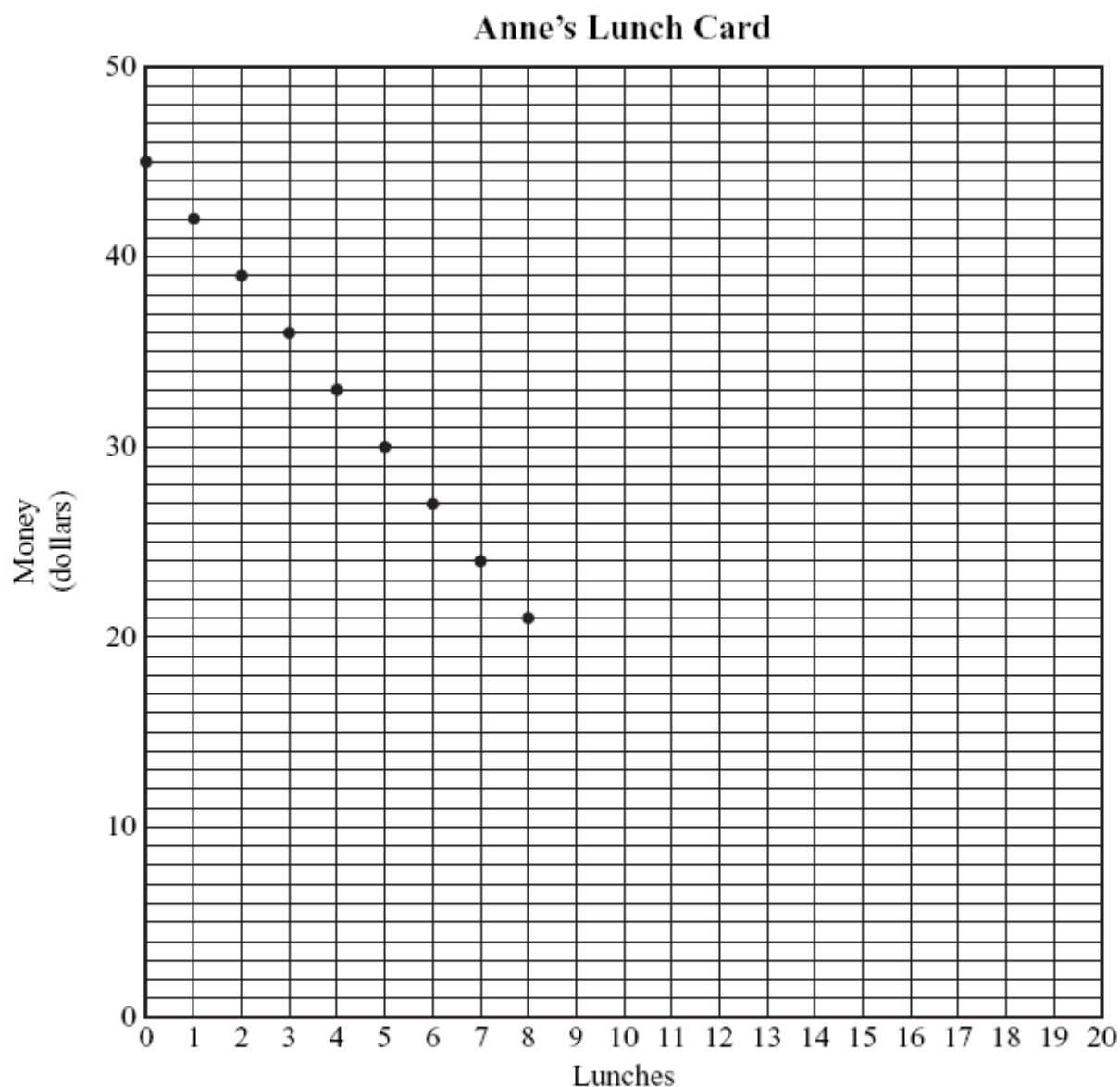
A 6

B 8

C 10

D 12

- 17 Anne had a lunch card that was worth \$45. Each time she bought lunch, some money was deducted from the card. The amount of money left on the card after each lunch is shown on the graph below.

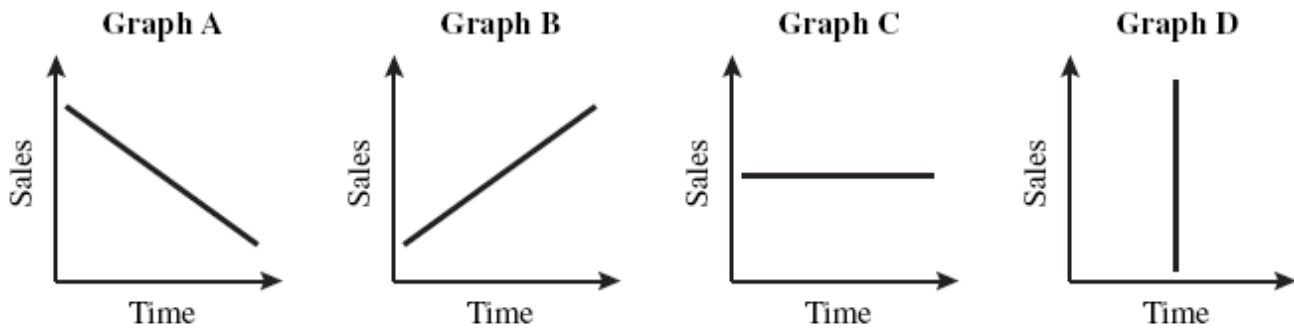


If Anne continues to buy lunches at this rate, how many lunches will she buy in all?

- A 3
- B 15
- C 18
- D 45

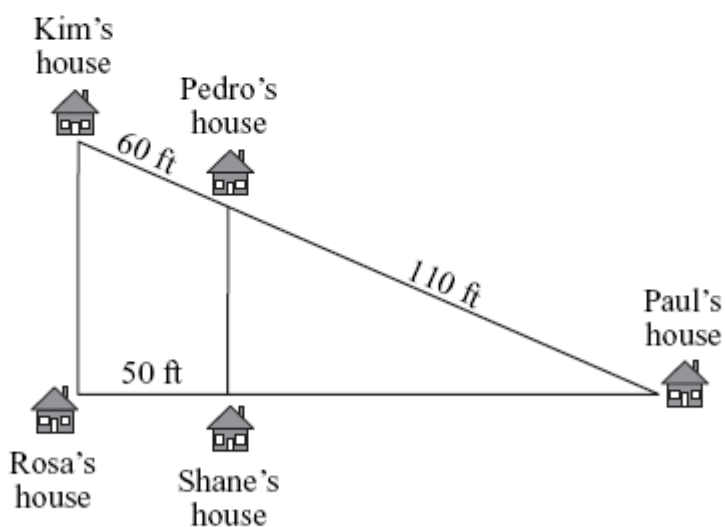
- 18 Which of the following could be a record of Mr. Gallagher's business if his total sales increased at a constant rate each week?

Mr. Gallagher's Sales Record



- A Graph A
B Graph B
C Graph C
D Graph D
- 19 A rectangle has its dimensions multiplied by 4. What happens to its perimeter?
- A The perimeter is also multiplied by 4.
B The perimeter is multiplied by 8.
C The perimeter is multiplied by 12.
D The perimeter is multiplied by 16.
- 20 Which of the following must be true for two polygons to be similar?
- A Corresponding angles are congruent.
B Corresponding sides are congruent.
C The areas of the two polygons are equal.
D The perimeters of the two polygons are equal.

- 21 Two quadrilaterals are similar. Which of the following must be true?
- A All corresponding sides are congruent.
 - B All corresponding angles are congruent.
 - C All opposite sides are congruent.
 - D All opposite angles are congruent.
- 22 Jason is building a model airplane. The scale of the model is 1 cm to 1.25 m. If the actual airplane measures 7.50 meters in length, what will be the length of the model?
- A 1.25 cm
 - B 6.00 cm
 - C 6.25 cm
 - D 7.50 cm
- 23 A map of Paul's neighborhood is shown below.



Which is closest to the distance from Paul's house to Shane's house?

- A 120 feet
- B 92 feet
- C 36 feet
- D 30 feet

- 24 A man who is 6 feet tall casts a shadow 15 feet long. At exactly the same time, a tree casts a shadow that is 140 feet long. How tall is the tree?
- A 9.33 feet
- B 23.33 feet
- C 56.00 feet
- D 90.00 feet
- 25 Mr. Perez's and Mr. Lewis's classes collected data about how many CDs each student owns.

Mr. Perez		Mr. Lewis
7620	0	155
320	1	0117
521100	2	566
	3	009
655000	4	
930	5	278
	6	5556
521	7	5
52	8	0
	9	02
9	10	5

How many students are in Mr. Perez's class?

- A 11
- B 28
- C 53
- D 64

26 Brianna used the table below to record her expenses.

Brianna's Expenses

Category	Percent of Income
Rent	40%
Utilities	15%
Gas	5%
Food	10%
Savings	15%
Other	15%

Which of the following is the *best* way to display this data?

- A bar graph
- B line graph
- C circle graph
- D stem-and-leaf plot

- 27 Mr. Perez's and Mr. Lewis's classes collected data about how many CDs each student owns.

Mr. Perez		Mr. Lewis
7620	0	155
320	1	0117
521100	2	566
	3	009
655000	4	
930	5	278
	6	5556
521	7	5
52	8	0
	9	02
9	10	5

How many students in Mr. Lewis's class own 5 CDs?

- A 2
- B 6
- C 8
- D 13

- 28 Ms. Johnson's students rated a book. Scores could range from 1 to 10. The summary of scores is given below.

Summary of Scores

Score	Frequency	Cumulative Frequency
1	0	
2	0	
3	0	
4	1	1
5	3	4
7	6	10
8	6	16
9	14	30
10	2	32

What score did students give *most* frequently to the book?

- A 7
- B 8
- C 9
- D 10

- 29 Twenty students took a 10-point quiz. The scores are summarized in the table below.

Scores on Quiz

Score	Frequency	Cumulative Frequency
0	0	
1	0	
2	0	
3	0	
4	0	
5	1	1
6	1	2
7	3	5
8	10	15
9	3	18
10	2	20

How many students had a score *greater* than 8?

- A 2
- B 3
- C 5
- D 15

- 30 Two hundred college students were asked how many hours of homework they did each night. Their responses are summarized in the table below.

Hours Doing Homework

Hours	Frequency	Cumulative Frequency
5	25	200
4	35	175
3	50	140
2	50	90
1	30	40
0	10	10

What percent of students reported doing 4 or more hours per night?

- A 12.5%
- B 25.0%
- C 30.0%
- D 60.0%

PART 3

DIRECTIONS

You will now begin Part 3 of this test. You may use a calculator on this part of the test, and you may use open space in this test booklet for scratch paper. No additional sheets may be used.

If you finish early, you may check your work for Part 3 **ONLY**.

Do **NOT** look at items in other parts of this test.

You will have at least 50 minutes to finish Part 3 of this test.

- 31 Diana is making punch for her grandparents' anniversary party. The recipe calls for $2\frac{1}{2}$ parts lemon-lime soda for each 1 part lemonade. If Diana uses 3 quarts of lemonade, how many quarts of soda should she use?
- A $1\frac{1}{2}$
- B $5\frac{1}{2}$
- C 6
- D $7\frac{1}{2}$
- 32 In Ian's math class, the ratio of students with brown hair to students with blond hair is 3:2. If there are 12 students with blond hair, how many students have brown hair?
- A 8
- B 15
- C 18
- D 36
- 33 A recipe calls for $\frac{1}{8}$ cup of sugar. The recipe makes 3 servings. Which equation can be used to determine how much sugar would be needed in order to make enough for 24 servings?
- A $24 \div 8 = 3$
- B $3 \times \frac{1}{8} = \frac{3}{8}$
- C $3 \div \frac{1}{8} = 24$
- D $\frac{1}{8} \times 8 = 1$

- 34 Each face of a cube has an area of 4 square inches. What is the length of one edge of the cube?
- A 2 inches
 - B 4 inches
 - C 8 inches
 - D 16 inches
- 35 A square has an area of 40 square centimeters. What is the length of one side of the square?
- A $\sqrt[3]{40}$ centimeters
 - B $\sqrt{40}$ centimeters
 - C 10 centimeters
 - D 20 centimeters
- 36 The volume of a cube is 64 cubic inches. What is the length of one side?
- A 2 inches
 - B 4 inches
 - C 8 inches
 - D 16 inches

- 37 At noon the temperature was 20°F . It dropped 25°F that day, and another 5°F before midnight. What was the temperature at midnight?
- A -10°F
 - B -5°F
 - C 0°F
 - D 10°F
- 38 The temperature required for an experiment in the lab chamber is -165°F . Currently, the temperature in the lab chamber is 32°F . What change in temperature is needed to get the lab chamber to the correct temperature? (Positive represents an increase in temperature and negative represents a decrease in temperature.)
- A -197°F
 - B -133°F
 - C 133°F
 - D 197°F
- 39 A team of geologists was studying subsoil conditions on a planned building site. Starting 6 meters above sea level, they drilled down 5 meters and then down another 5 meters. The final sample was taken 3 meters below that. If zero represents sea level, which number represents the final depth in meters to which the team drilled?
- A -3
 - B -7
 - C -13
 - D -19

40 Which of the following is equivalent to $\frac{4}{9}\left(\frac{1}{2} - \frac{2}{3}\right)$?

A $\frac{4}{9} \times \frac{1}{2} - \frac{4}{9} \times \frac{2}{3}$

B $\frac{4}{9} \times \frac{1}{2} + \frac{9}{4} \times \frac{2}{3}$

C $\frac{4}{9} \times \frac{1}{2} + \frac{4}{9} \times \frac{3}{2}$

D $\frac{4}{9} - \frac{2}{1} + \frac{4}{9} - \frac{3}{2}$

41 What is the multiplicative inverse of $\frac{4}{5}$?

A $-\frac{5}{4}$

B $-\frac{4}{5}$

C $\frac{5}{4}$

D $\frac{5}{-4}$

42 What is the sum of a number and its additive inverse?

A 0

B 1

C the opposite of the number

D the reciprocal of the number

43 Simplify: $(5x - 3y) + (-5x + 3y)$

- A 0
- B $6y$
- C $10x$
- D $6y + 10x$

44 Simplify: $(2y - z) - 3(y + z)$

- A $-y$
- B $-y - 2z$
- C $-y - 4z$
- D $y - 4z$

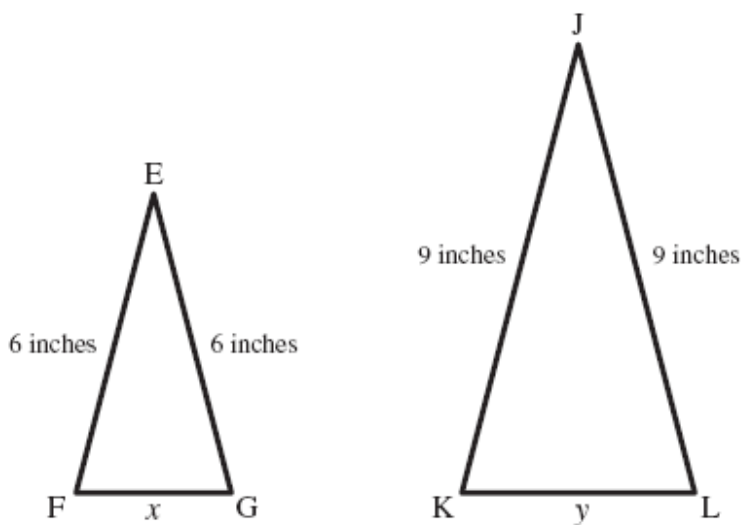
45 The Baskin brothers' ages are represented by the expressions below.

Jim: $3x + 1$
Joe: $4x - 2$
Jeff: $2x + 3$

If the sum of their ages is 47, which of the following equations could be used to find out how old each is?

- A $9x - 6 = 47$
- B $9x + 2 = 47$
- C $24x - 6 = 47$
- D $24x + 2 = 47$

- 46 Glenn drew two right triangles. The first triangle has legs that are 3 inches and 4 inches. The second triangle has legs that are 6 inches and 8 inches. Which of the following statements about these triangles is true?
- A The two triangles are congruent.
 - B The two triangles are similar but not congruent.
 - C The two triangles are not similar.
 - D The two triangles may or may not be similar, depending on the length of each hypotenuse.
- 47 Triangle EFG has two sides that are 6 inches long. The length of its third side (x) is unknown. Triangle JKL has two sides that are 9 inches long. The length of its third side (y) is unknown.



For the two triangles to be similar, which of the following must be true?

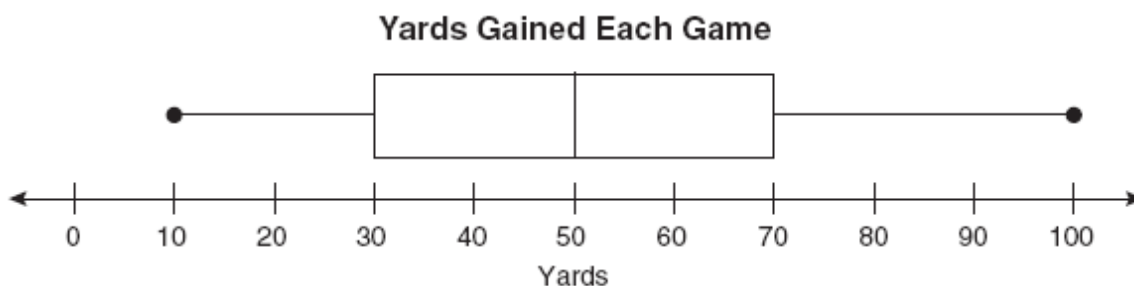
- A $x = \frac{2}{3}y$
- B $x = \frac{3}{2}y$
- C $x = 3y$
- D $x = y$

- 48 Which of the following is always true regarding triangles?
- A All equilateral triangles are similar.
 - B All right triangles are similar.
 - C All isosceles triangles are similar.
 - D All similar triangles are congruent.
- 49 If the length of each side of a triangle is cut to $\frac{1}{3}$ of its original size, what happens to the area of the triangle?
- A The new area is $\frac{1}{27}$ of the original area.
 - B The new area is $\frac{1}{9}$ of the original area.
 - C The new area is $\frac{1}{6}$ of the original area.
 - D The new area is $\frac{1}{3}$ of the original area.
- 50 The dimensions of a triangle have been enlarged by a scale factor of r . Its new area is 9 times its original area. What is the value of r ?
- A $r = 3$
 - B $r = 6$
 - C $r = 9$
 - D $r = 18$

- 51 The sides of a triangle are reduced to $\frac{1}{10}$ their original length. The area of the reduced triangle is what fraction of the original area?

- A $\frac{1}{1,000}$
- B $\frac{1}{100}$
- C $\frac{1}{20}$
- D $\frac{1}{10}$

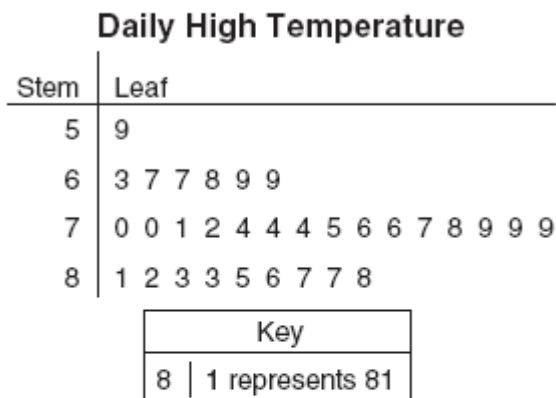
- 52 The number of yards gained each game during Shannon's four years on his football team is displayed in the box-and-whisker plot below.



Which is *closest* to the interquartile range in yards of the data?

- A 70
- B 50
- C 40
- D 25

- 53 Annika recorded the high temperature in her city each day during the month of May in degrees Fahrenheit. Her results are displayed in the stem-and-leaf plot shown below.



What is the median of this data?

- A** 59°F
- B** 72°F
- C** 76°F
- D** 88°F
- 54 Robin asked some of the students in her class the amount of time each spent on the computer Tuesday night. The results are listed below.

**Number of Minutes Spent on
Computer Tuesday Night**

15	45	65	0	25	31
20	52	90	20	35	46
27	0	18	60	40	50

What is the median of this set of data?

- A** 25
- B** 33
- C** 35
- D** 55

- 55 In your answer document, draw a rectangle with an area of 12 square centimeters. Label the side lengths.

ANSWER THIS ITEM IN YOUR ANSWER DOCUMENT.

SHOW ALL YOUR WORK IN YOUR ANSWER DOCUMENT.

- 56 Given the equation $y = 4x - 8$, what is the value of x when $y = 0$?

A -2
B 2
C 3
D 8

- 57 A store develops photographs. The cost for this service can be determined using the table below.

Developing

Number of Photos Developed	Cost of Developing
1	\$0.19
2	\$0.38
3	\$0.57
4	\$0.76
5	\$0.95
6	\$1.14

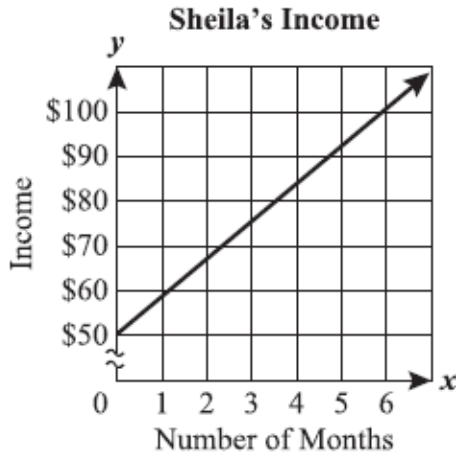
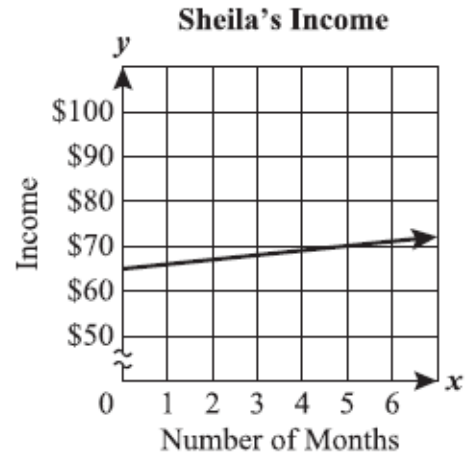
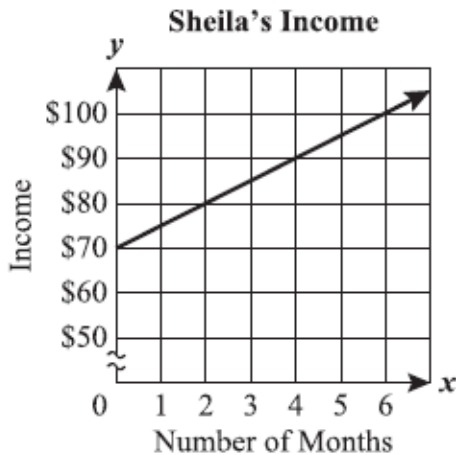
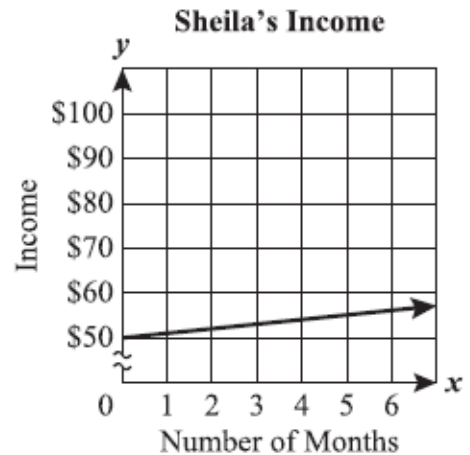
Based on the data in the table, how much would it cost to develop 36 photographs?

A \$0.36
B \$3.60
C \$6.65
D \$6.84

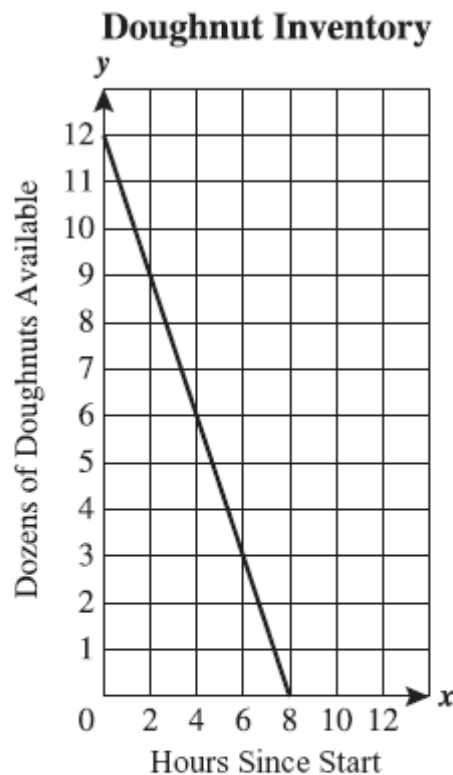
58 Rocco is cooking rice. The amounts of rice he needs for one, two, and three servings are $\frac{1}{4}$ cup, $\frac{1}{2}$ cup, and $\frac{3}{4}$ cup. Which of the following *best* describes this pattern?

- A It is linear because each amount is $\frac{1}{2}$ cup more than the previous one.
- B It is linear because each amount is $\frac{1}{4}$ cup more than the previous one.
- C It is nonlinear because each amount is not related to the previous one.
- D It is nonlinear because each amount is twice the previous one.

- 59 The following graphs show Sheila's monthly income over several 6-month periods. Which graph shows an increase of \$5 per month in Sheila's income?

A**B****C****D**

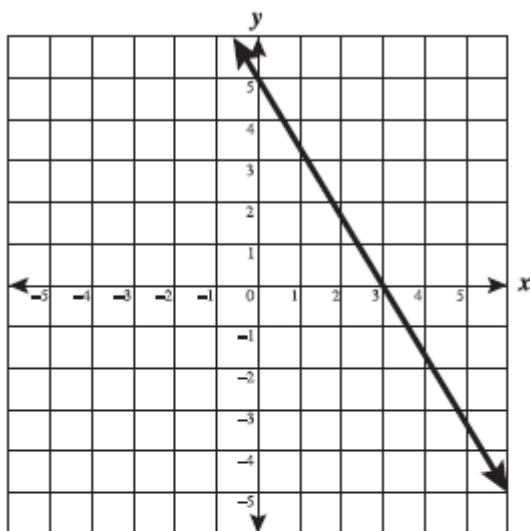
- 60 A telephone company offers different plans to its customers. Which of the following is a plan in which the cost is directly proportional to the number of minutes spent on the phone?
- A You pay \$40 per month.
 - B You pay 10 cents per minute of calls.
 - C You pay \$10 per month plus 5 cents per minute of calls.
 - D You pay 10 cents per minute for weekend and evening calls, and 20 cents per minute for other times.
- 61 At 6:00 a.m. Mrs. Jackson started to sell 12 dozen doughnuts in her convenience store. The following graph records her doughnut inventory.



At what time did Mrs. Jackson sell out of doughnuts?

- A 9 a.m.
- B 12 noon
- C 2 p.m.
- D 9 p.m.

62 What appears to be the vertical intercept (y-intercept) of the graph below?

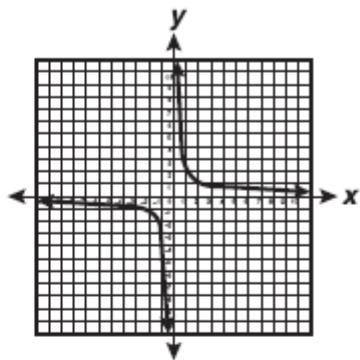


- A $\left(0, \frac{3}{5}\right)$
- B $\left(0, \frac{5}{3}\right)$
- C (0, 3)
- D (0, 5)
- 63 A landscaper has determined that it will take 3 workers 6 days to complete the landscaping in front of a new office building. However, the job needs to be completed in just 2 days. How many workers does he need to get the job done in time?
- A 6
- B 9
- C 12
- D 18

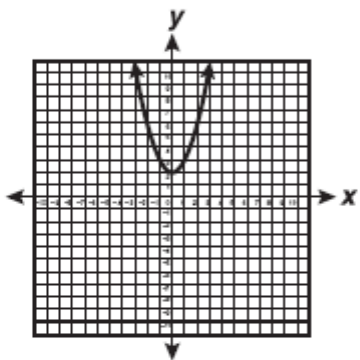
64 Which of the following appears to be the graph of the equation below?

$$y = \frac{2}{x}$$

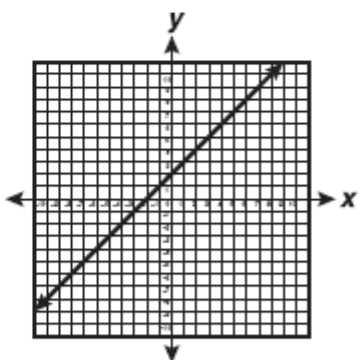
A



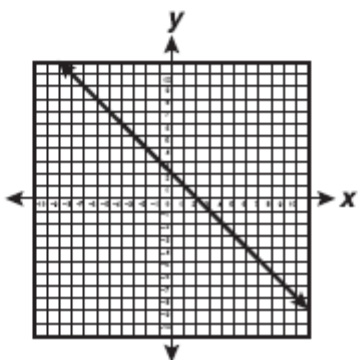
B



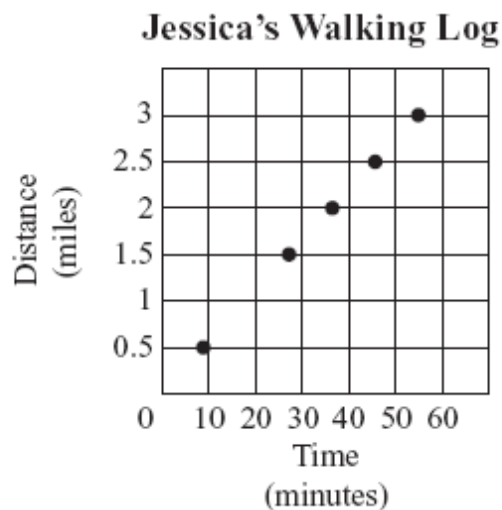
C



D



- 65 Jessica kept a log of the distance she walked each day and the time it took her to walk that distance. Below is her walking log for one week.



- Which is closest to the amount of time it took Jessica to walk 1 mile?
- A 12 minutes
 - B 18 minutes
 - C 30 minutes
 - D 36 minutes
- 66 The population of Michigan was 10,079,985 in 2003. The area of Michigan is 56,809 square miles. What was the approximate population density, in people per square mile, in 2003?
- A 0.01 people per square mile
 - B 28 people per square mile
 - C 177 people per square mile
 - D 333 people per square mile

Scoring Key: Part 1

Item No.	Correct Answer	GLCE	Type	Description
1	C	N.FL.07.08	Core-NC	Add, subtract, multiply & divide rational numbers
2	B	N.FL.07.08	Core-NC	Add, subtract, multiply & divide rational numbers
3	C	N.FL.07.08	Core-NC	Add, subtract, multiply & divide rational numbers
4	D	N.FL.07.09	Core-NC	Estimate results of computations with rationals
5	B	N.FL.07.09	Core-NC	Estimate results of computations with rationals
6	B	N.FL.07.09	Core-NC	Estimate results of computations with rationals

NC=Non Calculator

Scoring Key: Part 2

Item No.	Correct Answer	GLCE	Type	Description
7	B	N.FL.07.03	Core	Calculate rates of change, including speed
8	D	N.FL.07.03	Core	Calculate rates of change, including speed
9	B	N.FL.07.03	Core	Calculate rates of change, including speed
10	A	N.MR.07.04	Core	Convert ratio quantities between systems of units
11	B	N.MR.07.04	Core	Convert ratio quantities between systems of units
12	B	N.MR.07.04	Core	Convert ratio quantities between systems of units
13	B	A.RP.07.02	Core	Show linear relats. w/ tables, graphs, formulas
14	B	A.RP.07.02	Core	Show linear relats. w/ tables, graphs, formulas
15	A	A.RP.07.02	Core	Show linear relats. w/ tables, graphs, formulas
16	D	A.PA.07.04	Core	Solve applied linear problems w/ graphs, equations
17	B	A.PA.07.04	Core	Solve applied linear problems w/ graphs, equations
18	B	A.PA.07.04	Core	Solve applied linear problems w/ graphs, equations
19	A	G.TR.07.03	Core	Know properties of similar figures and scale factor.

Scoring Key: Part 2 (continued)

Item No.	Correct Answer	GLCE	Type	Description
20	A	G.TR.07.03	Core	Know properties of similar figures and scale factor.
21	B	G.TR.07.03	Core	Know properties of similar figures and scale factor.
22	B	G.TR.07.04	Core	Solve problems of similar figures, scale drawings
23	B	G.TR.07.04	Core	Solve problems of similar figures, scale drawings
24	C	G.TR.07.04	Core	Solve problems of similar figures, scale drawings
25	B	D.RE.07.01	Core	Create, select, interpret graphical representations
26	C	D.RE.07.01	Core	Create, select, interpret graphical representations
27	A	D.RE.07.01	Core	Create, select, interpret graphical representations
28	C	D.AN.07.03	Core	Interpret relative & cumulative frequencies
29	C	D.AN.07.03	Core	Interpret relative & cumulative frequencies
30	C	D.AN.07.03	Core	Interpret relative & cumulative frequencies

Scoring Key: Part 3

Item No.	Correct Answer	GLCE	Type	Description
31	D	N.FL.07.05	Core	Solve proportion problems
32	C	N.FL.07.05	Core	Solve proportion problems
33	D	N.FL.07.05	Core	Solve proportion problems
34	A	N.MR.07.06	Core	Understand the concept of square root and cube root
35	B	N.MR.07.06	Core	Understand the concept of square root and cube root
36	B	N.MR.07.06	Core	Understand the concept of square root and cube root
37	A	N.FL.07.07	Core	Solve problems involving operations with integers
38	A	N.FL.07.07	Core	Solve problems involving operations with integers

Scoring Key: Part 3 (continued)

Item No.	Correct Answer	GLCE	Type	Description
39	B	N.FL.07.07	Core	Solve problems involving operations with integers
40	A	A.PA.07.11	Core	Understand & use basic properties of real numbers
41	C	A.PA.07.11	Core	Understand & use basic properties of real numbers
42	A	A.PA.07.11	Core	Understand & use basic properties of real numbers
43	A	A.FO.07.12	Core	Compute simple linear algebraic expressions
44	C	A.FO.07.12	Core	Compute simple linear algebraic expressions
45	B	A.FO.07.12	Core	Compute simple linear algebraic expressions
46	B	G.TR.07.05	Core	Show similarity of triangles using properties
47	A	G.TR.07.05	Core	Show similarity of triangles using properties
48	A	G.TR.07.05	Core	Show similarity of triangles using properties
49	B	G.TR.07.06	Core	Use similarity of triangles and scale factor
50	A	G.TR.07.06	Core	Use similarity of triangles and scale factor
51	B	G.TR.07.06	Core	Use similarity of triangles and scale factor
52	C	D.AN.07.04	Core	Find, interpret the median, quartiles, and IQR
53	C	D.AN.07.04	Core	Find, interpret the median, quartiles, and IQR
54	B	D.AN.07.04	Core	Find, interpret the median, quartiles, and IQR
55	E	G.SR.07.01	Core-CR	Use ruler, other tools to draw polygons
56	B	A.FO.07.08	Future	Find and interpret x and y intercepts
57	D	A.FO.07.13	Future	Generate and solve linear equations

Scoring Key: Part 3 (continued)

Item Number	Correct Answer	GLCE	Type	Description
58	B	A.PA.07.01	Future	Recognize proportional or linear relationships
59	C	A.PA.07.03	Future	Graph linear equations & interpret slope
60	B	A.PA.07.05	Future	Use proportional & linear relationships
61	C	A.PA.07.06	Future	Compute the slope of a linear equation
62	D	A.PA.07.07	Future	Graph linear equa'ns, interpret slope, y-intercept
63	B	A.PA.07.09	Future	Recognize inversely proportional relationships
64	A	A.RP.07.10	Future	Know properties of the graph of $y = k/x$
65	B	D.AN.07.02	Future	Make, interpret scatterplots; find line of best fit
66	C	N.MR.07.02	Future	Solve problems involving derived quantities