

Test, Form 1A

Write the letter for the correct answer in the blank at the right of each question.

1. What is the fraction $\frac{6}{11}$ written as a decimal?
 A. 0.54 B. $0.\overline{54}$ C. 0.55 D. 0.611 1. _____
2. What is the value of the expression $(-4)^3$?
 F. -64 G. -12 H. 12 I. 64 2. _____
3. Which of the following is $0.\overline{7}$ as a fraction in simplest form?
 A. $\frac{7}{12}$ B. $\frac{7}{11}$ C. $\frac{7}{10}$ D. $\frac{7}{9}$ 3. _____
4. Using exponents, what is the simplified form of the expression $\frac{10^{16}}{10^3}$?
 F. 10^{18} G. 10^{12} H. 10^5 I. 1^{12} 4. _____
5. Using exponents, what is the simplified form of the expression $6^5 \cdot 6^{27}$?
 A. 6^7 B. 6^{10} C. 36^7 D. 36^{10} 5. _____
6. Rory's garden is square in shape. The length of one side of her garden is 5^2 feet. What is the area of her garden in square feet? Express your answer using exponents.
 F. 10^4 G. 10^2 H. 5^4 I. 625 6. _____
7. What is the simplified form of the expression $(3x^4)^3$?
 A. $9x^7$ B. $9x^{12}$ C. $27x^7$ D. $27x^{12}$ 7. _____
8. What is the next term in the pattern $3^2 = 9$, $9^2 = 81$, $81^2 = 6,561$,...?
 F. $324 + 2 = 326$ H. $6,561^2 = 43,046,721$
 G. $324 \times 1 = 324$ I. $324 \times 2 = 648$ 8. _____
9. How is the expression 5^{-3} written using a positive exponent?
 A. 3^5 B. 5^3 C. 15 D. $\frac{1}{5^3}$ 9. _____
10. How is the fraction $\frac{1}{2^3}$ written using a negative exponent?
 F. -3^2 G. -2^3 H. 2^{-3} I. 3^{-2} 10. _____
11. What is 3.471×10^{-5} written in standard form?
 A. 3,471,000 B. 347,100 C. 0.0003471 D. 0.00003471 11. _____

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Test, Form 1A

Write the letter for the correct answer in the blank at the right of each question.

Translate each sentence into an equation.

1. The sum of five times a number and -6 is -2 .

A. $-6n + 5 = -2$

C. $5n - (-6) = -2$

B. $\frac{n}{5} - 6 = -2$

D. $5n + (-6) = -2$

1. _____

2. Three less than one-half a number is -71 .

F. $-\frac{1}{2}n + 2 = -71$

H. $\frac{1}{2}n - 3 = -71$

G. $2n - \frac{1}{2} = -71$

I. $3 - \frac{1}{2}n = -71$

2. _____

Solve each equation.

3. $10 + \frac{1}{3}y = 1$

A. -30

B. -27

C. 27

D. 30

3. _____

4. $-0.4w = 4.2$

F. 105

G. -10.5

H. -105

I. 10.5

4. _____

5. $\frac{x}{2} - 5 = -3$

A. 4

B. 1

C. -4

D. -16

5. _____

6. $-5 - 3w = 7w$

F. 4

G. 2

H. -0.5

I. -2

6. _____

7. $\frac{4}{7}w = 16$

A. 4

B. 14

C. 28

D. 112

7. _____

8. Marianna wants to buy a new tennis racket that costs \$57.50.

She has \$8 and plans to save \$4.50 each week. How many weeks will it take her to save the money?

F. 24 weeks

H. 11 weeks

G. 15 weeks

I. 10 weeks

8. _____

Test, Form 1A (continued)

SCORE _____

9. In a contest, each finalist must answer 5 questions correctly. Each question is worth twice as much as the question before it. The fifth question is worth \$1,600. How much is the first question worth?

- A. \$800 C. \$200
B. \$400 D. \$100

9. _____

Solve each equation.

10. $4x - 2 = 22 - 8x$

- F. -6 G. -2 H. 2 I. 6

10. _____

11. $5n - 12 = -3n + 4$

- A. 2 C. all real numbers
B. 1 D. -2

11. _____

12. $49 - 3m = 4m + 14$

- F. all real numbers H. 3
G. 5 I. 1

12. _____

13. $-2y - 3y + 8 = 8 - 5y - 12$

- A. -11 B. 2 C. null set D. 11

13. _____

14. $-3(p + 2) = -30$

- F. $-\frac{32}{3}$ G. 8 H. null set I. $\frac{-32}{3}$

14. _____

15. $0.4(2 - q) = 0.2(q + 7)$

- A. -3 C. 3
B. -1 D. all real numbers

15. _____

16. The Hazell family has 4 children. Murphy is 1 year younger than his older brother Michael. Keira is 2 years younger than Murphy. Isabelle and Keira are twins. If Michael is 8, how old is Isabelle?

- F. 8 H. 5
G. 7 I. 4

16. _____

17. Sarah and Bryan went shopping and spent a total of \$47.50. Bryan spent \$15.50 less than what Sarah spent. How much did Bryan spend?

- A. \$31.50 C. \$16
B. \$31 D. \$15.50

17. _____

Test, Form 1A

Write the letter for the correct answer in the blank at the right of each question.

1. What is the constant rate of change between the values of x and y in the table?

x	1	5	9	13
y	-6	-3	0	3

- A. $-\frac{4}{3}$ B. $-\frac{3}{4}$ C. $\frac{3}{4}$ D. $\frac{4}{3}$ 1. _____

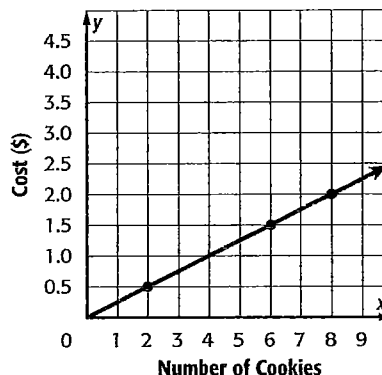
2. What is the slope of the line that passes through the points $A(-2, -1)$ and $D(3, 5)$?

- F. $\frac{6}{5}$ G. $\frac{5}{6}$ H. $-\frac{5}{6}$ I. $-\frac{6}{5}$ 2. _____

3. What are three numbers that have a sum of 35 if the greatest number is 14 more than the least number?

- A. 6, 7, 20 B. 5, 11, 19 C. 10, 11, 24 D. 1, 15, 15 3. _____

4. The costs of cookies at store A are shown in the graph. The cost y for x cookies at store B is represented by the equation $y = 0.30x$. Which of the following statements is true?

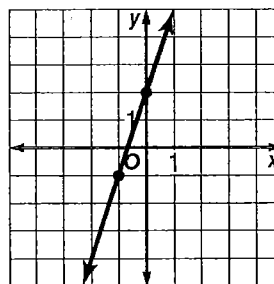


- F. The cookies at store A cost more.
 G. The cookies at store A cost \$0.50 each.
 H. The cookies at store B cost \$0.15 each.
 I. The cookies at store B cost more. 4. _____

5. What are the slope and y -intercept for the graph of $y - 7x = 10$?

- A. slope: 7, y -intercept: 10 C. slope: -7, y -intercept: 10
 B. slope: 7, y -intercept: -10 D. slope: -7, y -intercept: -10 5. _____

6. Which is the equation in slope-intercept form for the graph of the line shown?



- F. $y = -3x - 2$ H. $y = 3x - 2$
 G. $y = -3x + 2$ I. $y = 3x + 2$ 6. _____

Test, Form 1A (continued)

7. David is having his birthday party at a water park. The park charges \$150 plus \$10 per guest. The total cost of the party y can be represented by the equation $y = 10x + 150$. What does the slope represent?

- A. the number of guests
- B. the cost to rent the water park
- C. the cost per guest
- D. David's age

7. _____

8. Which equation, in point-slope form, passes through $(3, -1)$ and has a slope of 2?

- F. $y + 1 = 2(x - 3)$
- G. $y - 1 = 2(x + 3)$
- H. $y + 1 = 2(x + 3)$
- I. $y - 1 = 2(x - 3)$

8. _____

9. What are the x - and y -intercepts for the graph of $2x - 5y = 10$?

- A. x -intercept: -5 , y -intercept: 2
- B. x -intercept: -5 , y -intercept: -2
- C. x -intercept: 5 , y -intercept: -2
- D. x -intercept: 5 , y -intercept: 2

9. _____

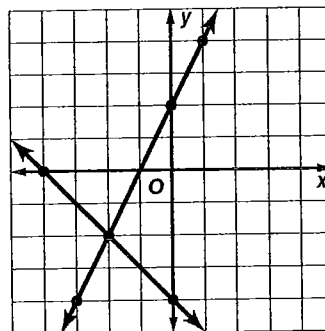
10. Xavier has \$20 more than Sara. Their combined money totals \$90. Which system of equations represents this situation?

- F. $x + s = 90$
 $s + x = 20$
- G. $x + s = 90$
 $x - s = 20$
- H. $x - s = 90$
 $s + s = 20$
- I. $s - x = 90$
 $x - s = 20$

10. _____

11. Which of the following is the solution of the system of equations shown?

- A. $(2, 2)$
- B. $(-2, 2)$
- C. $(2, -2)$
- D. $(-2, -2)$



11. _____

12. What is the solution of the system of equations?

- $y = x - 4$
- $y = -3x$
- F. $(3, -1)$
- G. $(-3, 1)$
- H. $(-1, 3)$
- I. $(1, -3)$

12. _____

13. What is the solution of the system of equations?

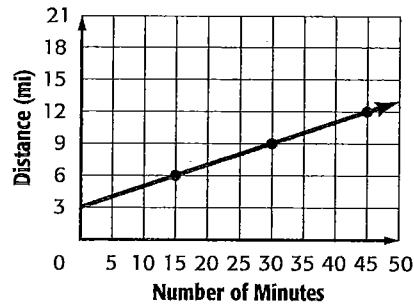
- $y = x - 10$
- $y = 2x + 5$
- A. $(15, 25)$
- B. $(15, -25)$
- C. $(-15, -25)$
- D. $(-15, 25)$

13. _____

Test, Form 1A

Write the letter for the correct answer in the blank at the right of each question.

1. Miguel and Molly are cyclists. The graph shows the distance Miguel biked one day. Molly biked at a rate of 0.15 mile per minute. Which statement about their speeds is true?



- A. Molly's speed was the same as Miguel's speed.
 B. Molly's speed was greater than Miguel's speed.
 C. Miguel traveled 0.2 mile per minute.
 D. Miguel traveled 5 miles per minute.

1. _____

2. What is $f(3)$ if $f(x) = -4x + 1$?

- F. -44 G. -11 H. $\frac{1}{2}$ I. 13

2. _____

3. Which table represents a nonlinear function?

A.

x	-1	0	1	2
y	5	7	9	11

C.

x	-5	0	5	10
y	1	3	7	15

B.

x	5	9	13	17
y	-6	-4	-2	0

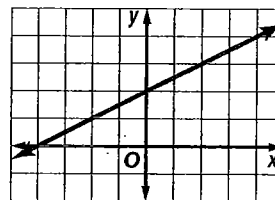
D.

x	6	4	2	0
y	1	5	9	13

3. _____

4. Which function is graphed at the right?

- F. $y = \frac{1}{2}x + 2$
 G. $y = x + 2$
 H. $y = -\frac{1}{2}x + 2$
 I. $y = -2x + 2$



4. _____

5. Which function matches the function table at the right?

- A. $f(x) = x + 3$
 B. $f(x) = 2x$
 C. $f(x) = 4x - 1$
 D. $f(x) = x + 2$

x	f(x)
-2	0
1	3
5	7

5. _____

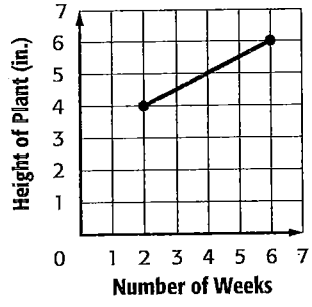
6. Graphs that represent situations that may not have numerical values are called?

- F. linear G. nonlinear H. qualitative I. quadratic

6. _____

Test, Form 1A (continued)

7. A plant is a certain height. The height of the plant is measured for several weeks. The graph shows the height of the plant for each week. Which statement is true?



- A. The plant grew 2 inches per week.
- B. The plant grew 0.5 inch per week.
- C. The initial height of the plant was 2 inches.
- D. The initial height of the plant was 4 inches.

7. _____

8. What is $f(3)$ if $f(x) = 2x + 1$?

- F. 4
- G. 7
- H. 8
- I. 11

8. _____

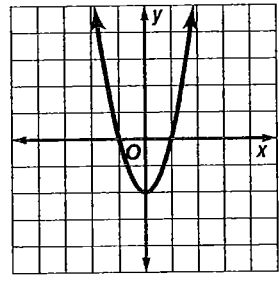
9. What is the domain of the relation $\{(-2, 4), (1, 3), (0, -4), (3, 2)\}$?

- A. $\{-2, 0, 1, 3\}$
- B. $\{-4, -2, 2, 3\}$
- C. $\{0, 1, 2, 4\}$
- D. $\{-4, 2, 3, 4\}$

9. _____

10. Which equation represents the graph at the right?

- F. $y = 2x^2 - 2$
- G. $y = -2x^2$
- H. $y = x^2 - 2$
- I. $y = -x^2$



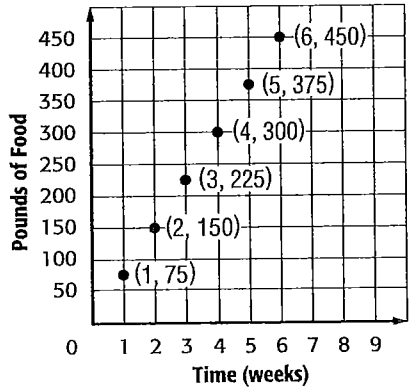
10. _____

11. Student tickets cost \$6.50 each, and adult tickets cost \$9.50 each. Which equation can be used to find the total cost of c of any number of student tickets t ?

- A. $t = 6.5c$
- B. $c = 6.5t$
- C. $t = 9.5c$
- D. $c = 9.5t$

11. _____

12. The graph shows the amount of food Dan's bobwhite quails eat each week. Which equation can be used to find the number of pounds y eaten after any number of weeks x ?



12. _____

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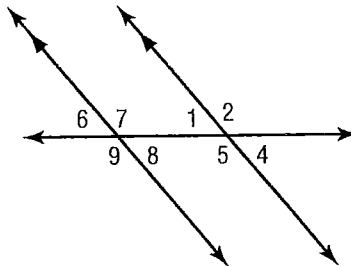
Test, Form 1A

Write the letter for the correct answer in the blank at the right of each question.

For Exercises 1 and 2, use the figure at the right.

1. What is $m\angle 8$ if $m\angle 4 = 50^\circ$?

- A. 50°
- B. 180°
- C. 70°
- D. 40°



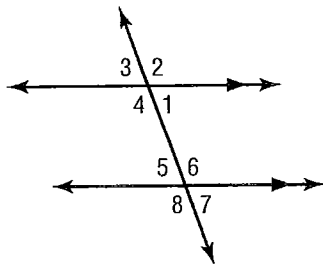
1. _____

2. If $m\angle 2 = 130^\circ$, what is $m\angle 6$?

- F. 40°
- G. 130°
- H. 50°
- I. 180°

2. _____

3. In the figure below, what is $m\angle 1$ if $m\angle 7 = 60^\circ$?



- A. 60°
- B. 90°
- C. 120°
- D. 150°

3. _____

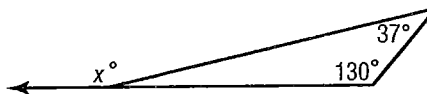
4. A triangle has angles measuring 15° and 45° . What is the measure of the triangle's third angle?

- F. 30°
- G. 90°
- H. 120°
- I. 180°

4. _____

5. What is the value of x in the triangle at the right?

- A. 13
- B. 37
- C. 130
- D. 167



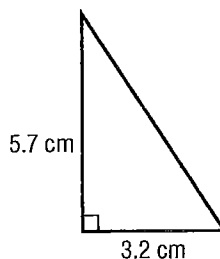
5. _____

Test, Form 1A *(continued)*

SCORE _____

6. One leg of a right triangle is 3.2 centimeters long. The length of the second leg is 5.7 centimeters. What is the length of the hypotenuse? Round to the nearest tenth if necessary.

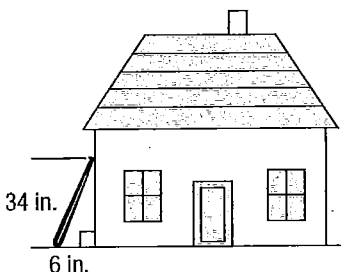
- F. 6.5 cm H. 4.7 cm
G. 6.4 cm I. 2.5 cm



6. _____

7. How far up on the playhouse is the baseball bat resting? Round to the nearest tenth if necessary.

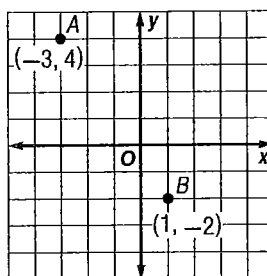
- A. 34.5 in.
B. 33.5 in.
C. 28 in.
D. 5.3 in.



7. _____

8. What is the distance between points $A(-3, 4)$ and $B(1, -2)$? Round to the nearest tenth if necessary.

- F. 6.08 units
G. 6.1 units
H. 6.5 units
I. 7.2 units



8. _____

9. Which of the following could be the side measures of a right triangle?

- A. 6 ft, 5 ft, 4 ft C. 10 ft, 8 ft, 6 ft
B. 8 ft, 7 ft, 6 ft D. 12 ft, 10 ft, 8 ft

9. _____

10. Which is the measures of an exterior angle of a regular octagon?

- F. 40° H. 50°
G. 45° I. 55°

10. _____

11. What is the sum of the interior angles of a regular pentagon?

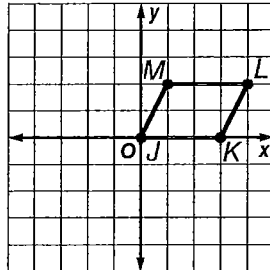
- A. 90° C. 540°
B. 180° D. 720°

11. _____

Test, Form 1A

Write the letter for the correct answer in the blank at the right of each question.

For Exercises 1–6, parallelogram $JKLM$ has vertices as shown.



1. If the figure is translated 4 units left, what are the coordinates of J' ?

- A. (0, -4)
- B. (0, 4)
- C. (-4, 0)
- D. (4, 0)

1. _____

2. If the figure is translated 2 units left and 4 units down, what are the coordinates of L' ?

- F. (-2, 2)
- G. (-2, -2)
- H. (2, 2)
- I. (2, -2)

2. _____

3. If the figure is rotated 90° clockwise about the origin, what are the coordinates of M' ?

- A. (-1, 2)
- B. (2, -1)
- C. (-2, 1)
- D. (-2, -1)

3. _____

4. If the figure is reflected over the x -axis, what are the coordinates of K' ?

- F. (0, 3)
- G. (0, -3)
- H. (3, 0)
- I. (-3, 0)

4. _____

5. If the figure is dilated using a scale factor of $\frac{1}{2}$, what are the coordinates of L' ?

- A. (2, 1)
- B. (2, -1)
- C. (8, 4)
- D. (-8, 4)

5. _____

6. If the figure is reflected over the y -axis, what are the coordinates of M' ?

- F. (1, -2)
- G. (-1, -2)
- H. (-1, 2)
- I. (2, -1)

6. _____

Test, Form 1A (continued)

SCORE _____

7. Triangle JKL has vertices $J(0, 2)$, $K(-1, 2)$, and $L(0, -3)$. What are the coordinates of the image of point K after a dilation with a scale factor of 4?

- A. $K'(8, 4)$
- B. $K'(8, -4)$
- C. $K'(4, 8)$
- D. $K'(-4, 8)$

7. _____

8. Triangle XYZ has vertices $X(-4, 3)$, $Y(-1, 2)$, and $Z(-2, 0)$. What are the coordinates of the image of $\triangle XYZ$ after a translation 3 units to the right and 1 unit up?

- F. $X'(-4, 4)$, $Y'(-1, 3)$ and $Z'(-2, 1)$
- G. $X'(-1, 4)$, $Y'(2, 3)$ and $Z'(1, 1)$
- H. $X'(-1, 3)$, $Y'(2, 2)$ and $Z'(1, 0)$
- I. $X'(-7, 4)$, $Y'(-4, 3)$ and $Z'(-5, 1)$

8. _____

9. Quadrilateral $ABCD$ has vertices $A(-1, 3)$, $B(-1, 0)$, $C(4, 0)$, and $D(4, 3)$. What are the coordinates of the image of point A after a reflection across the y -axis?

- A. $A'(3, -1)$
- B. $A'(3, 1)$
- C. $A'(1, 3)$
- D. $A'(-1, -3)$

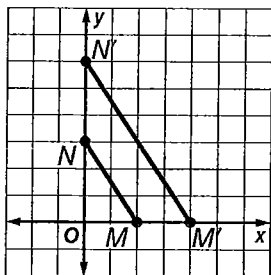
9. _____

10. Triangle MNP has vertices $M(5, 4)$, $N(5, 9)$, and $P(-1, 4)$. What are the coordinates of the image of point P after the triangle is rotated 180° clockwise about the origin?

- F. $P'(-4, 1)$
- G. $P'(1, -4)$
- H. $P'(-1, -4)$
- I. $P'(1, 4)$

10. _____

11. The graph shows segment $M'N'$ is a dilation of segment MN . What is the scale factor of the dilation?



- A. 4
- B. 2
- C. $\frac{1}{2}$
- D. $\frac{1}{4}$

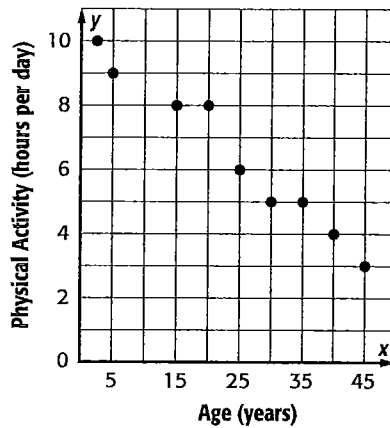
11. _____

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Test, Form 1A

Write the letter for the correct answer in the blank at the right of each question.

For Exercises 1–3, use the scatter plot shown at the right.



- What type of association is shown in the scatter plot?
 - a negative linear association
 - a positive linear association
 - a positive nonlinear association
 - no association
- Which of the following statements is best supported by the scatter plot?
 - As the age of a person increases, the time spent in physical activity increases.
 - As the time spent in physical activity increases, a person's age increases.
 - As the age of a person increases, the time spent in physical activity decreases.
 - There is no relationship between the age of a person and his or her amount of physical activity.
- Which of the following is a reasonable estimate for the daily amount of physical activity for a person who is 50 years old?

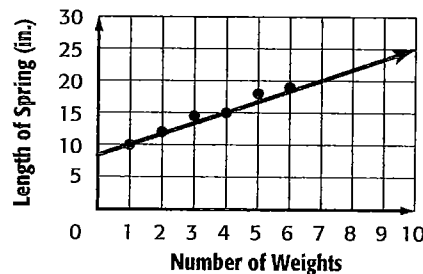
A. 6 h	C. 4 h
B. 5 h	D. 2 h

1. _____

2. _____

3. _____

For Exercises 4 and 5, use the scatter plot shown at the right. The scatter plot shows the length of a metal spring when weights are attached.



- Which of the following is the most reasonable equation for the line of best fit?

F. $y = 5x + 9$	H. $y = -1.5x + 9$
G. $y = -5x + 9$	I. $y = 1.5x + 9$
- Which of the following is the most reasonable estimate for the length of a spring when 20 weights are attached?

A. 25 in.	C. 54 in.
B. 39 in.	D. 62 in.

4. _____

5. _____

Test, Form 1A (continued)

For Exercises 6 and 7, use the two-way table shown below.

	Likes classical music	Dislikes classical music
Plays an instrument	15	2
Does not plays an instrument	3	25

6. What is the relative frequency of students that do not play an instrument and do not like classical music to the total number of students who do not play an instrument? Round to the nearest hundredth.
- F. 0.10 G. 0.83 H. 0.88 I. 0.89 6. _____
7. Which of the following is a valid conclusion about the data?
- A. Of the students that like classical music, most do not play a musical instrument.
- B. Of the students that like classical music, most play a musical instrument.
- C. There were a total of 27 students surveyed.
- D. Most of the students surveyed like classical music. 7. _____

For Exercises 8 and 9, use the following data set.

2, 3, 3, 4, 5, 7, 8, 8, 8, 10, 10, 12

8. What are the first and third quartiles of the data?
- F. 2, 12 G. 4.5, 8 H. 3, 10 I. 3.5, 9 8. _____
9. The standard deviation for the data is 3.23. Which of the following is within one standard deviation of the mean?
- A. 2 B. 5 C. 10 D. 12 9. _____
10. The table given below shows the number of students who attended the Spanish Club meetings during the school year. To the nearest tenth, what is the mean absolute deviation of the data?

Spanish Club Attendance		
14	21	17
26	13	20

- F. 18.5 G. 13.8 H. 3.8 I. 3.3 10. _____
11. If a data distribution is not symmetric, which should you use to describe the center?
- A. mean B. mode C. median D. range 11. _____