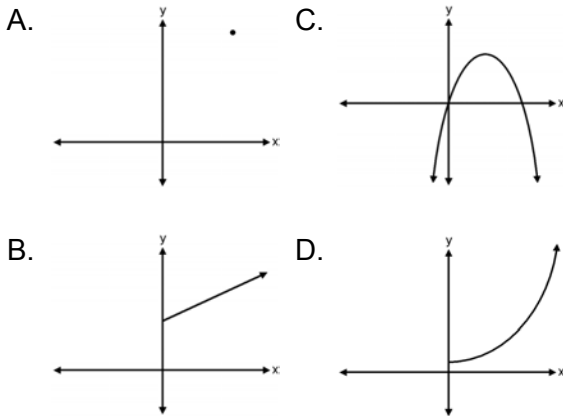


## DIRECTIONS

Read each of the questions below and then decide on the **BEST** answer. There are a lot of different kinds of questions, so read each question carefully before marking an answer on your answer sheet.

**1**

Which of the following is an example of a graph showing exponential growth?



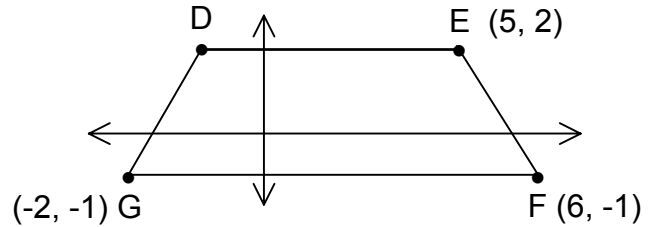
**2**

A bag contains 8 blue, 3 red, and 6 white chips. Only red chips are added to the bag. How many red chips must be added to the bag for the probability of drawing a red chip to be  $\frac{1}{3}$ ?

- A. 2
- B. 3
- C. 4
- D. 6

**3**

What are the coordinates of vertex D of isosceles trapezoid DEFG?



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

**4**

What is the **greatest** solution to the equation:

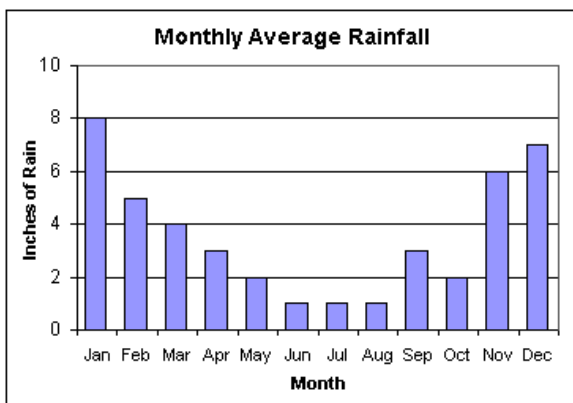
$$2x^2 - 5x + 2 = 0?$$

- A.  $x = -2$
- B.  $x = 1$
- C.  $x = 2$
- D.  $x = 4$

# Mathematics ▼

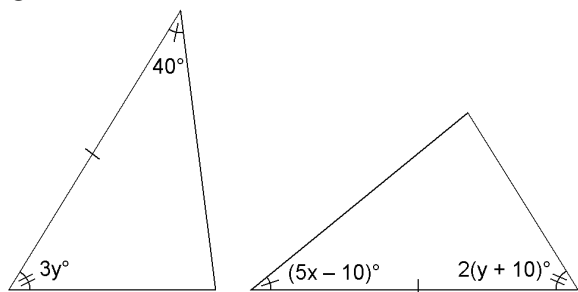
5

According to the graph, what is the median of the monthly average rainfall?



- A. 1 inch
- B. 3 inches
- C. 4 inches
- D. 7 inches

6

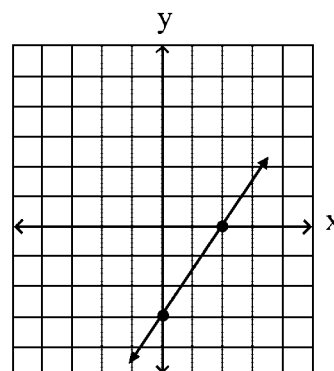


Using the figures above, find the value of  $x$  and the value of  $y$ .

- A.  $x = 10$  and  $y = 10$
- B.  $x = 10$  and  $y = 20$
- C.  $x = 40$  and  $y = 20$
- D.  $x = 40$  and  $y = 60$

7

Which equation does NOT represent the line graphed?



- A.  $3y = 2x - 6$
- B.  $2y - 3x = -6$
- C.  $y = \frac{3}{2}x - 3$
- D.  $2y = 3x - 6$

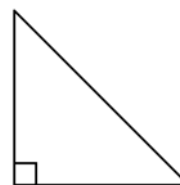
8

What percent of  $10^{-5}$  is  $10^{-6}$  ?

- A. 10%
- B.  $10^{-1}$
- C. 1%
- D. 110%

9

The two legs of a right triangle are each 15 cm.



Which answer best describes the length of the hypotenuse?

- A. 15.0 cm
- B. 21.2 cm
- C. 25.4 cm
- D. 30.0 cm

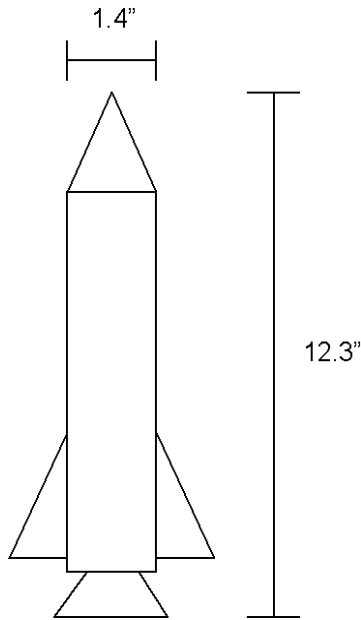
10

Find the solution set of  $3y - x = 4$  and  $2y = -x - 3$

- A.  $(-7, 2)$
- B.  $(-1, -1)$
- C.  $(-\frac{17}{5}, \frac{1}{5})$
- D.  $(-\frac{1}{5}, \frac{7}{5})$

11

The scale drawing for the rocket was drawn incorrectly. The actual rocket is supposed to be 15 feet in diameter and 138 feet high. What should the measurements on the drawing be?



- 1 inch = 12 feet
- A. 1.25" and 11.5"
  - B. 1.3" and 11.6"
  - C. 1.25" and 12.3"
  - D. 1.4" and 11.5"

12

What measure of central tendency would the Inglewood Chamber of Commerce prefer if they want to convince tourists that it doesn't rain very much in Inglewood?

*Average Inglewood Rainfall (inches)*

Jan	1	July	5
Feb	2	Aug	5
Mar	4	Sept	1
Apr	3	Oct	7
May	8	Nov	3
June	0	Dec	1

- A. Mean monthly rainfall
- B. Median monthly rainfall
- C. Mode of monthly rainfall
- D. Range of monthly rainfall

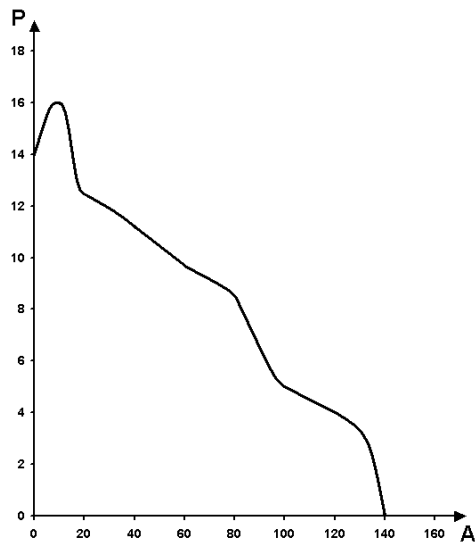
13

What are the coordinates of the point obtained if the point  $A = (3, 7)$  is rotated  $180^\circ$  about the midpoint between  $A$  and the origin?

- A.  $(-3, -7)$
- B.  $(1\frac{1}{2}, 3\frac{1}{2})$
- C.  $(3, 7)$
- D.  $(0, 0)$

# Mathematics ▼

14



The graph represents the atmospheric pressure (P in PSI) as a function of altitude (A in 1000's of ft) as collected from a weather balloon on a rainy day. What is the range of the function?

- A. 0 to 16 PSI
- B. 16 PSI
- C. 0 to 140,000 ft
- D. 140,000 ft

15

If  $a$ ,  $b$ ,  $c$  are real numbers and  $a < b < c$ , which of the following operations would change the values of the variables so that  $c < b < a$ ?

- A. Adding 10 to each variable
- B. Adding  $-10$  to each variable
- C. Multiplying each variable by 10
- D. Multiplying each variable by  $-10$

16

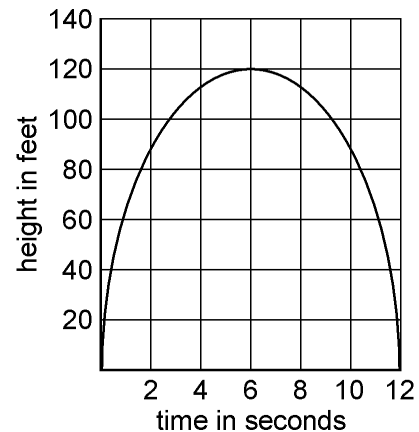
In this stem and leaf plot, which sentence is true?

3	1	1	2	5	7		
4	0	2	5	7	8		
5	2	3	3	6	7	9	9
6	1	4	4	4	6	7	
7	0	2	5	6			

$$7 \mid 0 = 70$$

- A. There are 27 values in the data set.
- B. The mean of the data is 56.
- C. The range of the data is 46.
- D. There are two modes.

17

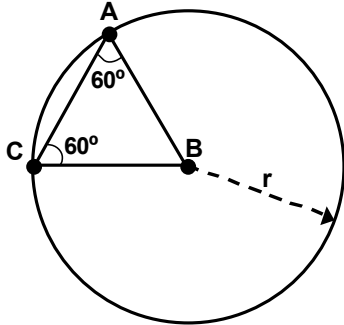


The graph represents the amount of time it takes an object thrown into the air to reach a specific height. Which of the following represents the amount of time it takes for the object to reach its maximum height?

- A. 120 seconds
- B. 12 seconds
- C. 6 seconds
- D. 4 seconds

**18**

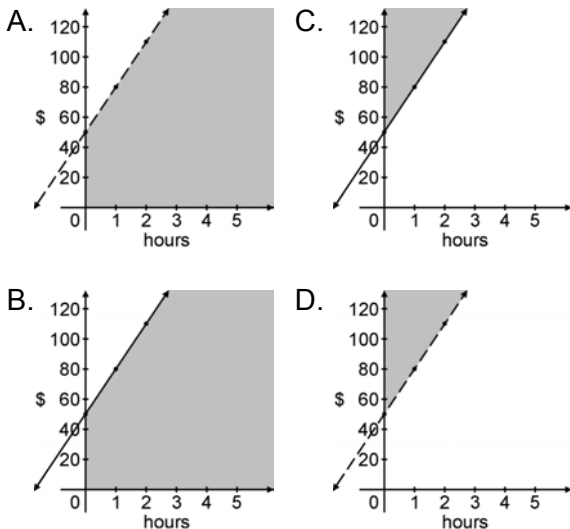
Given the illustration below, what is the length of the chord AC of circle B?



- A.  $r$
- B.  $2r$
- C.  $r^2$
- D. There's no way to tell from the information given.

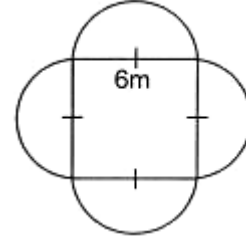
**19**

Ernest Ernest's Autorama claims that their car repair rates are the lowest in town. Ernest charges an initial fee of \$50 plus \$30 per hour. If Ernest's claim is true, then which of the graphs below best describes the rates charged by Ernest's competitors?



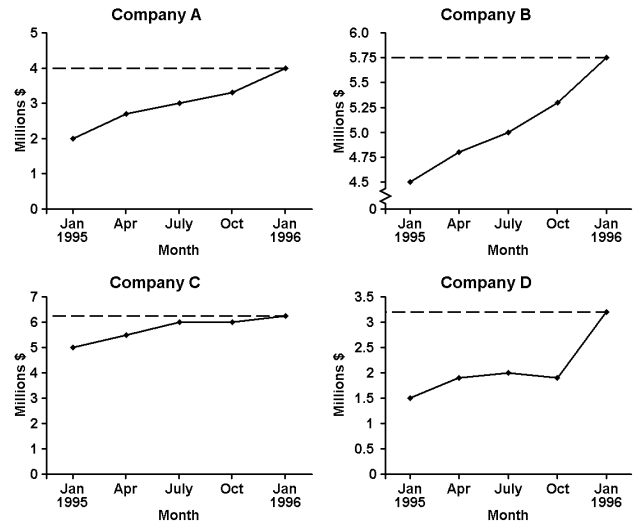
**20**

A 6-meter by 6-meter square has semi-circles on each side. What is the area of the figure to the nearest hundredth of a square meter?



- A.  $64.27 \text{ m}^2$
- B.  $80.55 \text{ m}^2$
- C.  $92.55 \text{ m}^2$
- D.  $149.10 \text{ m}^2$

**21**



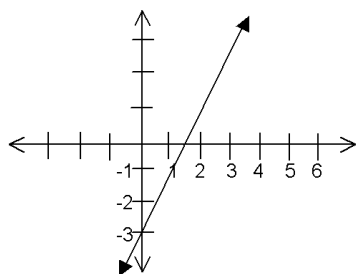
Which company has the greatest dollar increase in profits for the year 1995?

- A. Company A
- B. Company B
- C. Company C
- D. Company D

# Mathematics ▼

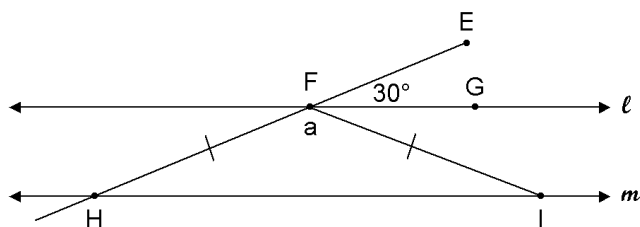
**22**

The equation of the graph is  $y - 2x = -3$ . What is  $x$  when  $y = -2$ ?



- A. -7
- B.  $\frac{1}{2}$
- C.  $-\frac{1}{2}$
- D. 7

**23**



Find the measure of angle  $a$ , given that  $l \parallel m$ ,  $m \angle EFG = 30^\circ$  and  $\overline{FH} \cong \overline{FI}$ .

- A.  $30^\circ$
- B.  $60^\circ$
- C.  $90^\circ$
- D.  $120^\circ$

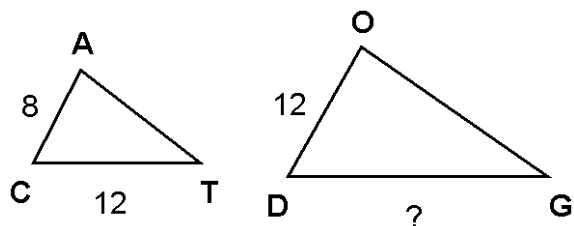
**24**

Solve for  $x$ :  $10 - 6x > 4x - 5$

- A.  $x < -\frac{5}{2}$
- B.  $x > -\frac{5}{2}$
- C.  $x < \frac{3}{2}$
- D.  $x > \frac{3}{2}$

**25**

$\triangle CAT$  is similar to  $\triangle DOG$ . What is the measure of  $\overline{DG}$ ?



- A. 16
- B. 18
- C. 20
- D. 24

**C.I.M. MATHEMATICS SAMPLE TEST KEY 2004 – 2007**

Test Item	Correct Answer	Score Reporting Category	SRC Code
1	D	Algebraic Relationships	4.3.C3
2	C	Statistics and Probability	3.2.C2
3	A	Geometry	5.3.C2
4	C	Algebraic Relationships	4.2.C8
5	B	Statistics and Probability	3.3.C5
6	B	Geometry	5.1.C5
7	A	Algebraic Relationships	4.1.C3
8	A	Calculations and Estimations	1.2.C12
9	B	Geometry	5.1.C9
10	C	Algebraic Relationships	4.2.C4
11	A	Measurement	2.2.C22
12	C	Statistics and Probability	3.1.81
13	D	Geometry	5.4.C4
14	A	Algebraic Relationships	4.1.C5
15	D	Calculations and Estimations	1.1.C1
16	A	Statistics and Probability	3.3.C5
17	C	Algebraic Relationships	4.2.C3
18	A	Geometry	5.1.C4
19	C	Algebraic Relationships	4.1.C3
20	C	Measurement	2.2.C14
21	A	Statistics and Probability	3.1.C1
22	B	Algebraic Relationships	4.2.82
23	D	Geometry	5.1.C3
24	C	Algebraic Relationships	4.2.82
25	B	Geometry	5.1.C7

<b>CONVERTING TO A RIT SCORE</b>			
Number Correct	RIT score	Number Correct	RIT score
1	201.7	14	239.6
2	209.6	15	241.4
3	214.5	16	243.3
4	218.3	17	245.3
5	221.3	18	247.4
6	223.9	19	249.6
7	226.3	20	252.1
8	228.4	21	255.0
9	230.4	22	258.5
10	232.3	23	263.2
11	234.2	24	270.7
12	236.0	25	277.9
13	237.8		

Note: The sample test is for practice only; scores may not be substituted for the Oregon Statewide Assessment.