

1. In 1998, the price of a candy bar was \$0.69. Today, the price is \$1.09. What is the percent increase of the price since 1998, to the nearest tenth of a percent?

- a. 40.0%
- b. 36.7%
- c. 58.0%
- d. 63.3%

2. Jeff rode his bike to school at 12 mph. When he left school he noticed his tire was flat, so he walked home at 4 mph by the same route. Jeff spent one hour total going to and from school. How far away is Jeff's school?

- a. 3 miles
- b. 6 miles
- c. 8 miles
- d. 16 miles

3. A right triangle has two legs, one measuring 9 inches and one measuring 12 inches. What is the triangle's perimeter?

- a. 21 inches
- b. 30 inches
- c. 36 inches
- d. Impossible to tell.

4. What is the x-intercept of the line $5y = 3x - 20$?

- a. $\frac{3}{5}$
- b. -4
- c. -20
- d. $\frac{20}{3}$

5. A line travels through the points (-1, 3) and (4, -7). What is the slope?

- a. -2
- b. $-\frac{1}{2}$
- c. $-\frac{4}{5}$
- d. $-\frac{4}{11}$

6. The moon's surface is 375,000 km away from the Earth's surface. If you drive at 100 mph, how many days will it take to get to the moon? (There is 1.6 km in every mile).

- a. 3750 days
- b. 97.656 days
- c. 2343.75 days
- d. 56.25 days

7. A skilled factory worker can put together a single toy in 20 seconds. A new factory worker takes 45 seconds to put together the same toy. After 3 minutes, how many more toys does the experienced worker have than the new worker?

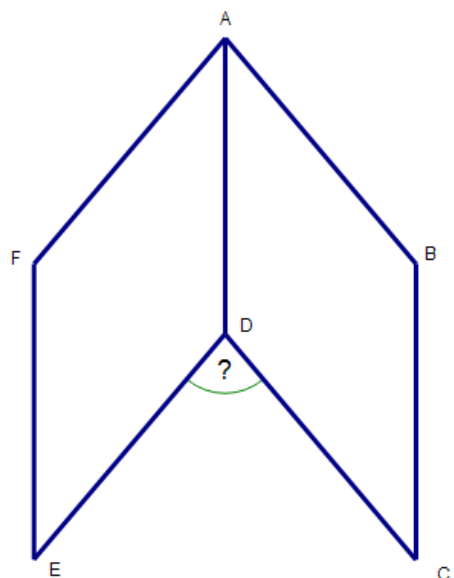
- a. 3 toys
- b. 4 toys
- c. 5 toys
- d. 9 toys

8. $153 \times 10^{-4} = ?$

- a. 0.153
- b. 0.0153
- c. 0.000153
- d. 0.0000153

9. Two congruent rhombi are connected at a side as shown in the picture. \overline{AB} is parallel to \overline{DC} , \overline{AF} is parallel to \overline{DE} , and \overline{FE} is parallel to \overline{AD} and \overline{BC} . $\angle AFE$ is congruent to $\angle ABC$. If $\angle ABC$ is 140° , what is $\angle FDC$?

- a. 60°
- b. 70°
- c. 80°
- d. 100°

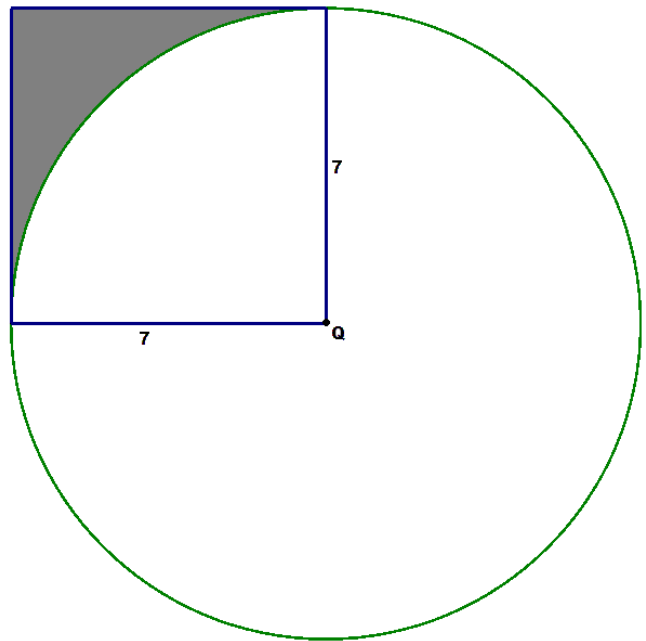


10. A group of 48 employees is taking 11 cars to the annual company picnic. If each car has either 4 or 5 employees, what is the number of cars carrying 5 employees?

- a. 4 cars
- b. 7 cars
- c. 0 cars
- d. 8 cars

11. A circle centered at Q with a radius of 7 overlaps a square as shown in the picture. What is the area of the shaded region?

- a. 10.515
- b. 38.485
- c. 27.009
- d. 49.000



12. If $3y + 2x = 7$, which of the following could be true?

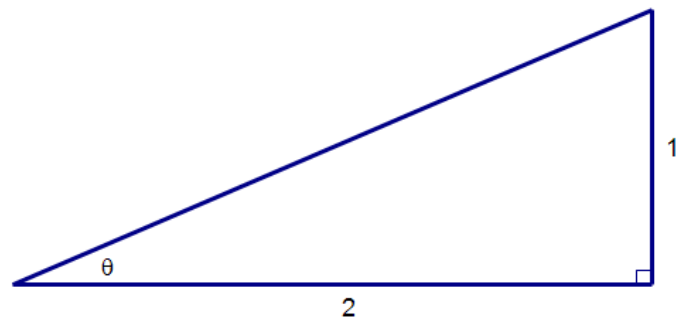
- a. $x = 2, y = 3$
- b. $x = 1, y = 2$
- c. $x = 4, y = 3$
- d. $x = 2, y = 1$

13. What is the average of 2, 3, 4, $x + 3$, $4x - 2$

- a. 2
- b. $x - 5$
- c. $x + 2$
- d. $5x + 10$

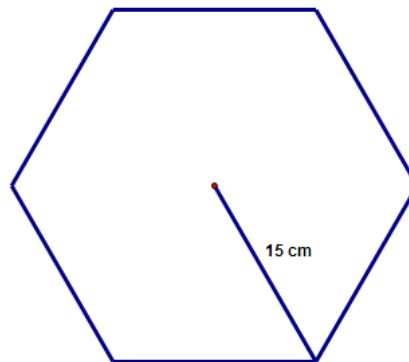
14. Find the cosine of the angle θ .

- a. 0.447
- b. 0.500
- c. 0.894
- d. 2.00



15. The distance from the center of this regular hexagon to one of its vertices is 15 cm. What is the perimeter of the hexagon?

- a. 225 cm
- b. 75 cm
- c. 30 cm
- d. 90 cm



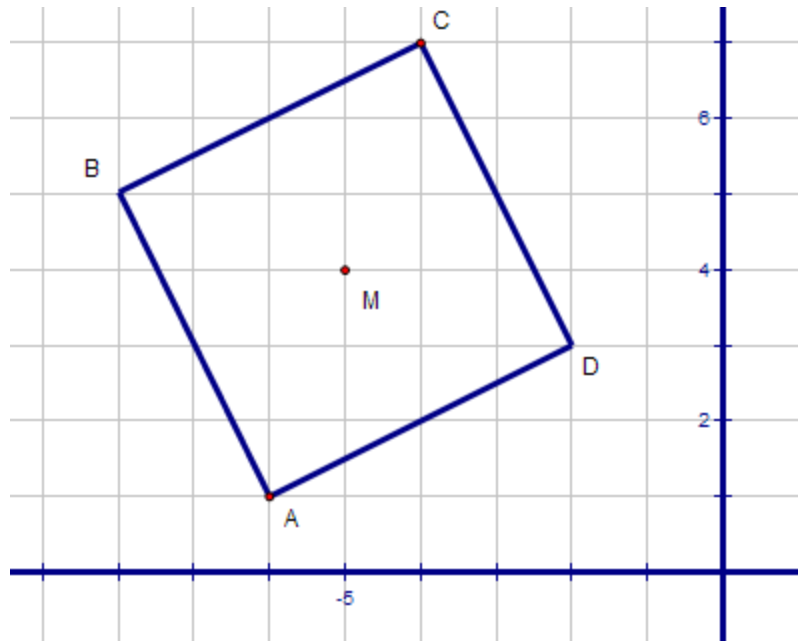
16. According to the pattern below, how many consecutive odd integers are required to make a sum of 169?

$$\begin{aligned}1 + 3 &= 4 \\1 + 3 + 5 &= 9 \\1 + 3 + 5 + 7 &= 16 \\1 + 3 + 5 + 7 + 9 &= 25\end{aligned}$$

- a. 11
- b. 17
- c. 13
- d. 19

17. Point A of square ABCD is located at $(-6, 1)$. Point C is located at $(-4, 7)$. If the square is rotated around point M and the new position of point A is $(-8, 3)$, what is the new position of point C?

- a. $(-2, 5)$
- b. $(-6, 9)$
- c. $(-2, 9)$
- d. $(-5, 5)$



18. Jill rolls three dice simultaneously. What is the probability she will roll two 5s and one 6?

a. $\frac{1}{5} \times \frac{1}{6} \times \frac{1}{6}$

b. $\frac{1}{5} \times \frac{1}{5} \times \frac{1}{5}$

c. $\frac{1}{6} \times \frac{1}{6} \times \frac{1}{6}$

d. $\frac{3}{5} \times \frac{3}{6} \times \frac{3}{6}$

19. $\frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} = ?$

a. $\frac{4}{14}$

b. $\frac{14}{55}$

c. $\frac{77}{60}$

d. $\frac{17}{20}$

20. $-5x + 3 \leq 18$ AND $7x + 1 < 64$. Which of these could NOT be x ?

a. -3

b. 1

c. 0

d. 9

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Answers:

1. c

2. a

3. c

4. d

5. a

6. b

7. c

8. b

9. c

10. a

11. a

12. d

13. c

14. c

15. d

16. c

17. a

18. c

19. c

20. d