

Math Level 1 SAT Practice Test 16

1. A car travels a steady speed of x miles per hour. How many hours, in terms of x , will it take to drive 540 miles?

A. $540x$

B. $540 + x$

C. $\frac{x}{540}$

D. $\frac{540}{x}$

E. $x - 540$



In the segment shown in Figure above, the length of \overline{BC} is three more than twice the length of \overline{AB} . If the length of \overline{AC} is 27 cm, what is the length of \overline{AB} ?

A. 8 cm

B. 9 cm

C. 10 cm

D. 12 cm

E. 15 cm

3. If $f(x) = x^2 - 10$ and $g(x) = 4x + 3$, what is $f(g(2))$?

A. -24

B. -21

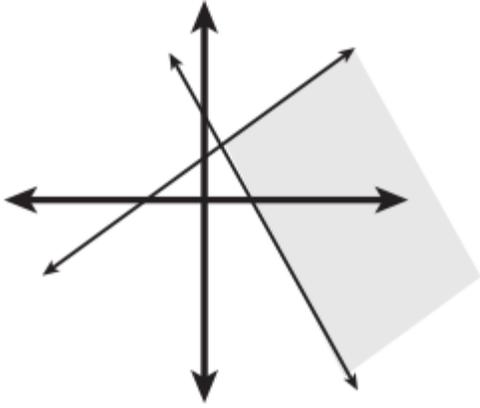
C. 12

D. 27

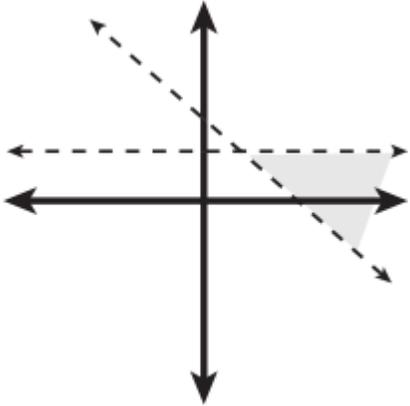
E. 111

4. Which graph below represents the solution to the following system of inequalities?

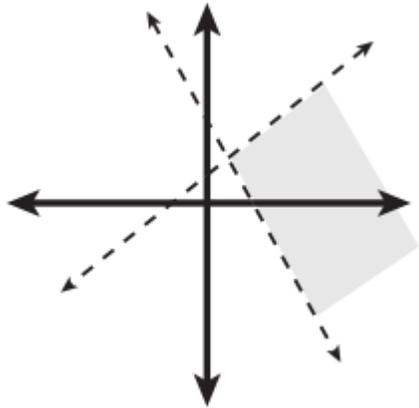
$$y < x + 2$$
$$y > -3x + 3$$



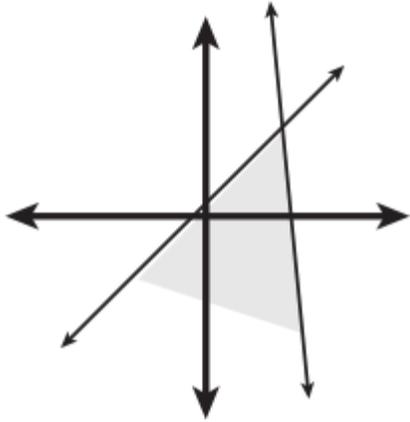
A.



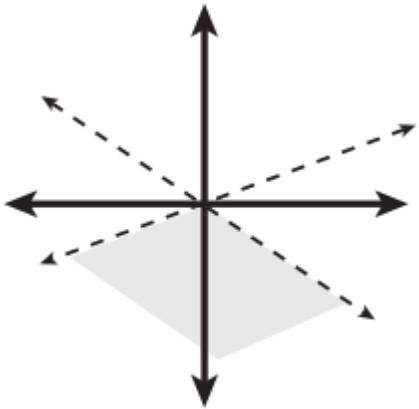
B.



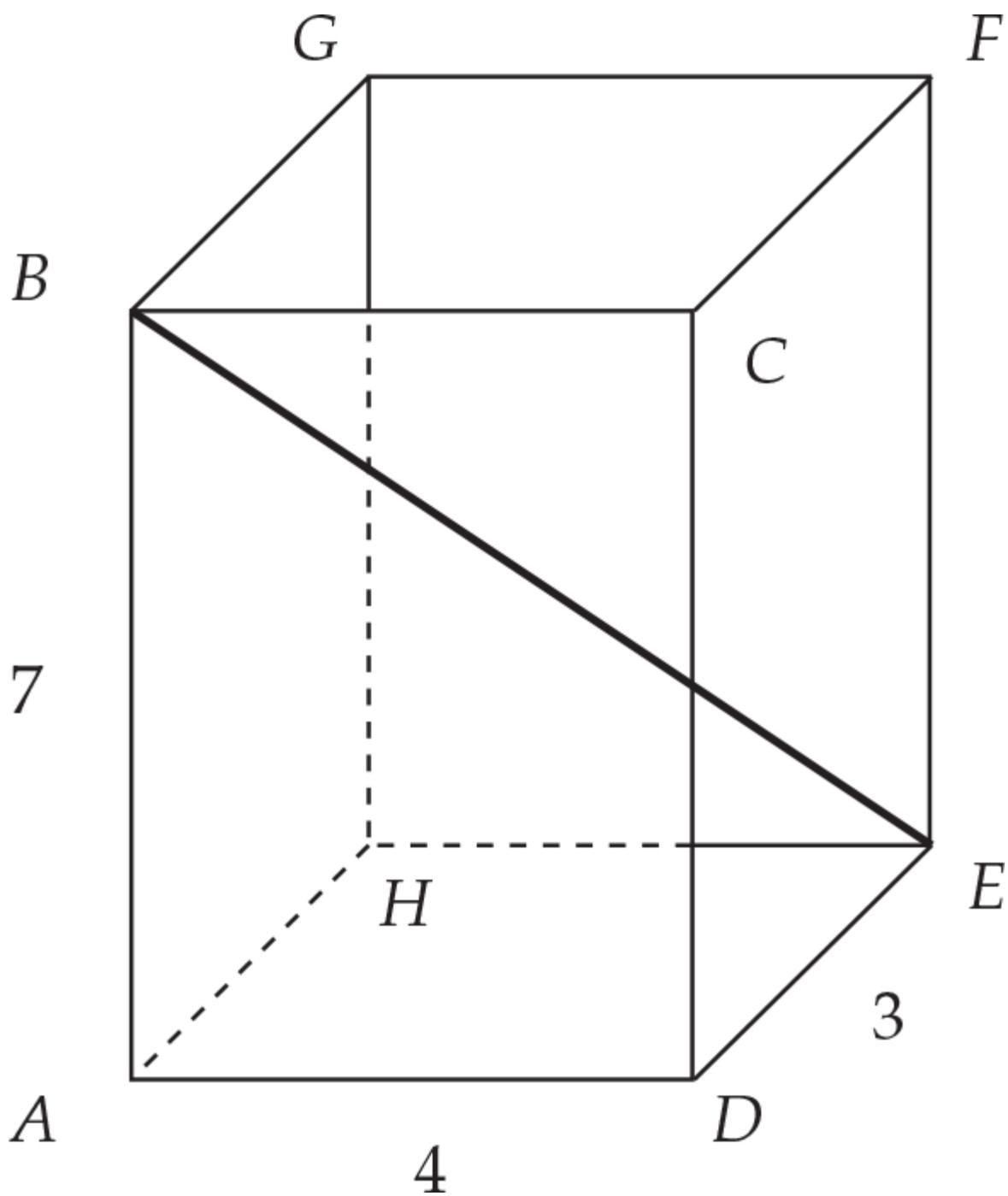
C.



D.



E.



5.
Figure3

In the rectangular solid shown in Figure 3, what is the length of diagonal \overline{BE} , to the nearest tenth?

- A. 7.07
- B. 8.6
- C. 10

D. 13.60

E. 25



6. Figure 4

In the segment shown in Figure 4, the ratio of the lengths of \overline{AB} to \overline{AC} is 5:8. If x represents AB , what is the midpoint of \overline{AC} in terms of x ?

A. $4x$

B. $\frac{4x}{5}$

C. $\frac{8x}{5}$

D. $\frac{5x}{2}$

E. $\frac{5x}{16}$

7. Let \otimes be defined as $a \otimes b = a^2 + ba - 16b \div a$. What is the value of $8 \otimes 3$?

A. -2.67

B. 5

C. 34

D. 46

E. 82

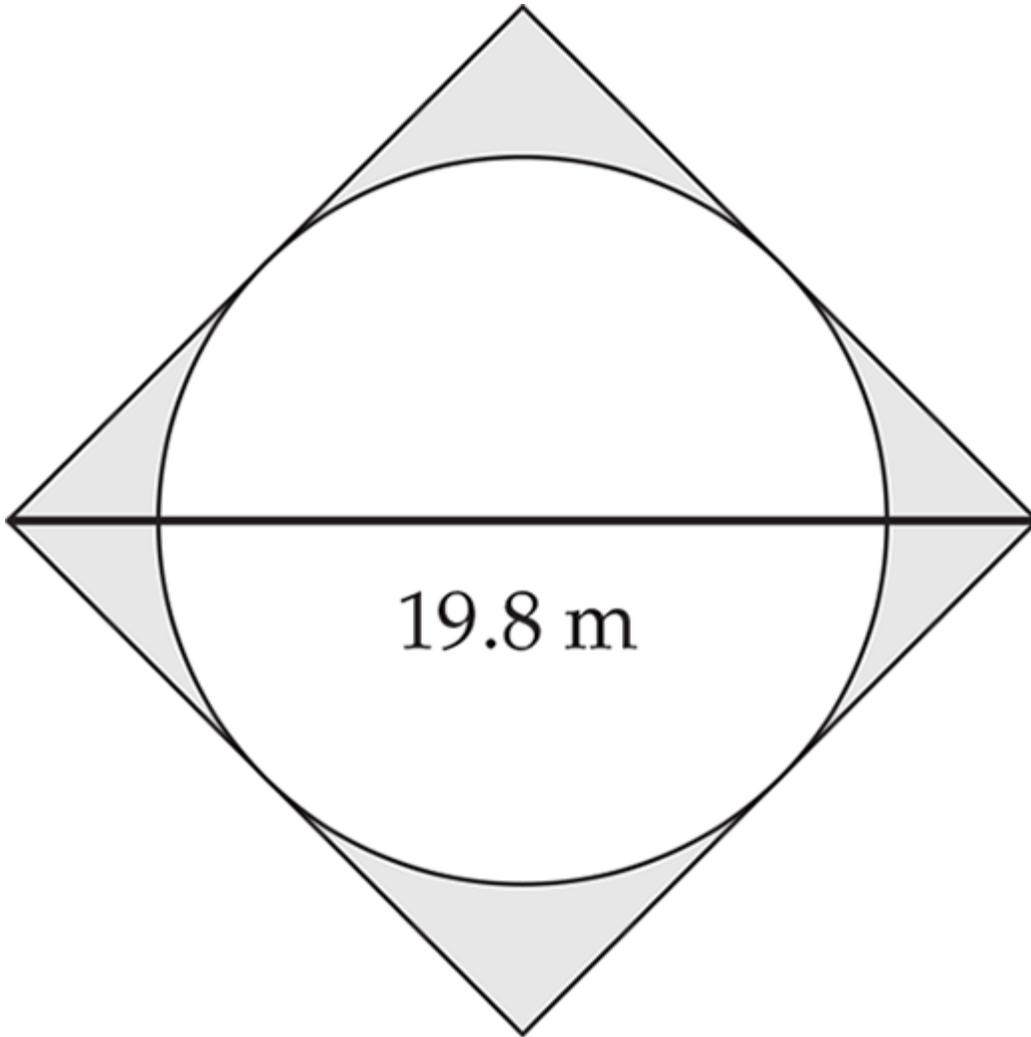
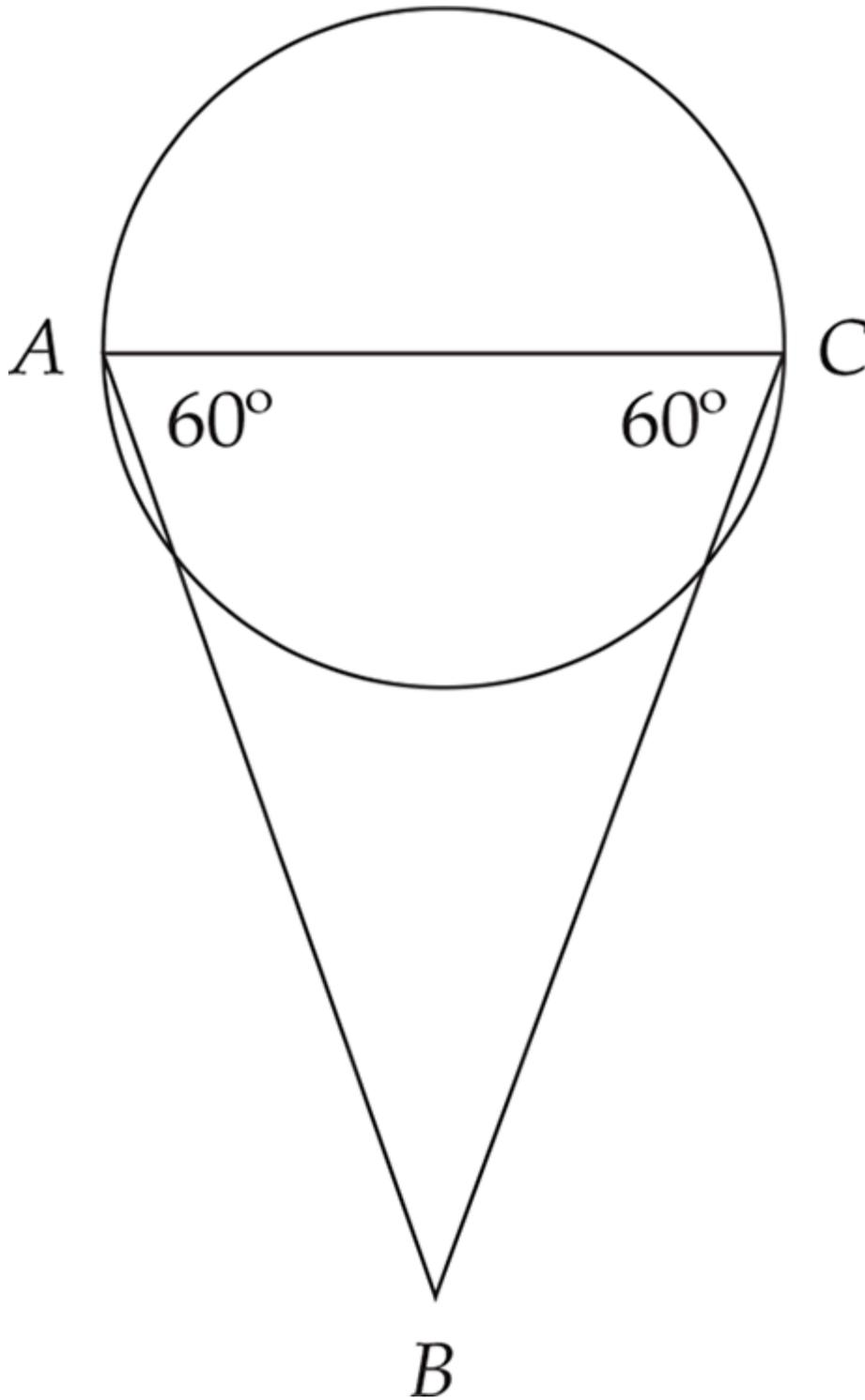


Figure5

8.

In Figure5, a circle is inscribed in a square. What is the area of the shaded portion, to the nearest hundredth?

- A. 10.52 m²
- B. 21.03 m²
- C. 22.6 m²
- D. 42.06 m²
- E. 84.13 m²



9.

Figure6

In Figure6, If the area of the circle is 64π square units, what is the area of triangle ABC to the nearest hundredth?

A. 55.43

- B. 110.85
- C. 128
- D. 221.7
- E. 443.41

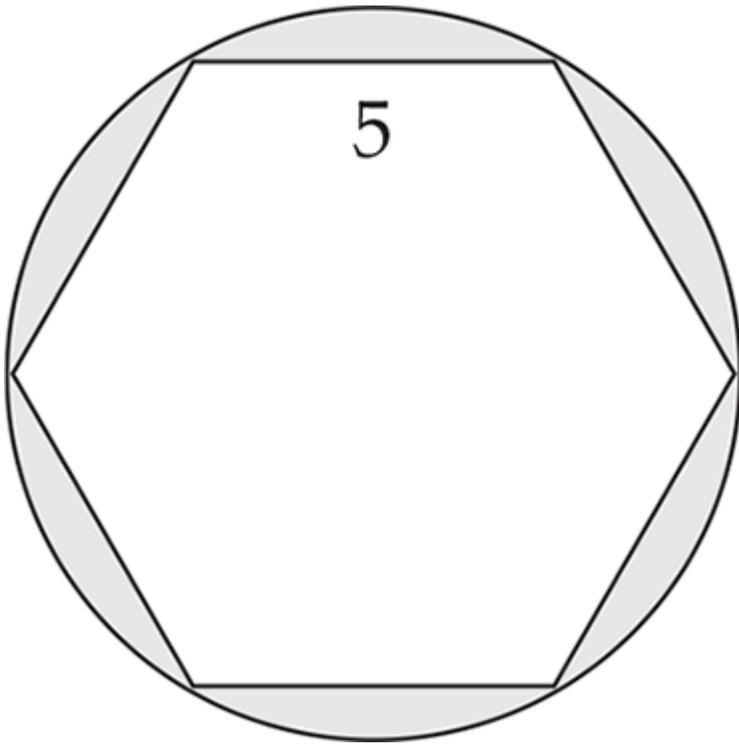


Figure7

10.

In Figure7, a regular hexagon of side length 5 cm is inscribed in a circle. What percentage of the circle is shaded, to the nearest tenth?

- A. 13.6%
- B. 17.3%
- C. 78.5%
- D. 82.7%
- E. 86.4%

11. A dog is chained on a 6-foot leash, fastened to the corner of a rectangular building. About how much area does the dog have to move in?

- A. 27 ft²
- B. 36 ft²
- C. 56.55 ft²

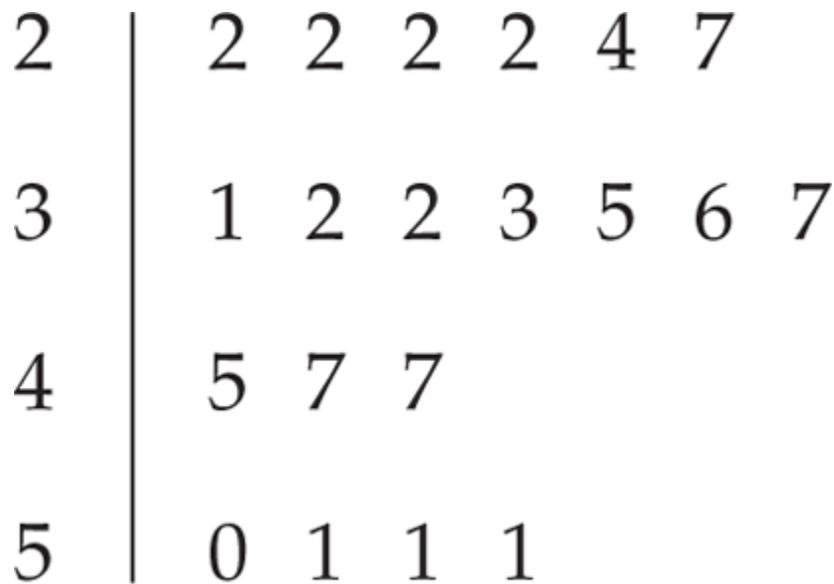
- D. 84.82 ft²
- E. 113.10 ft²

12. What is the domain of the function $f(x) = \frac{1}{\sqrt{x^2-16}}$?

- A. All the real numbers
- B. $x < -4$ or $x > 4$
- C. $x \geq 4$
- D. $x > 8$
- E. $x < -8$ or $x > 8$

13. Given the following stem-and-leaf plot and the statements shown below the plot, which of the statements are true?

The number of customers in line for an attraction



where 3 | 6 means 36 customers

The mode is equal to the median.

The median is less than the mean.

The mean is 33.

- A. I only
- B. II only
- C. III only

D. I and II only

E. II and III only

14.



What is the probability of picking an M card at random, without replacement, and then an A card, at random, without looking?

A. $\frac{4}{11}$

B. $\frac{4}{21}$

C. $\frac{4}{22}$

D. $\frac{2}{55}$

E. $\frac{4}{121}$

15.



What is the probability of picking an S card at random, without replacement, and then NOT picking a T card, at random, without looking?

A. $\frac{4}{55}$

B. $\frac{9}{121}$

C. $\frac{2}{11}$

D. $\frac{10}{22}$

E. $\frac{10}{11}$

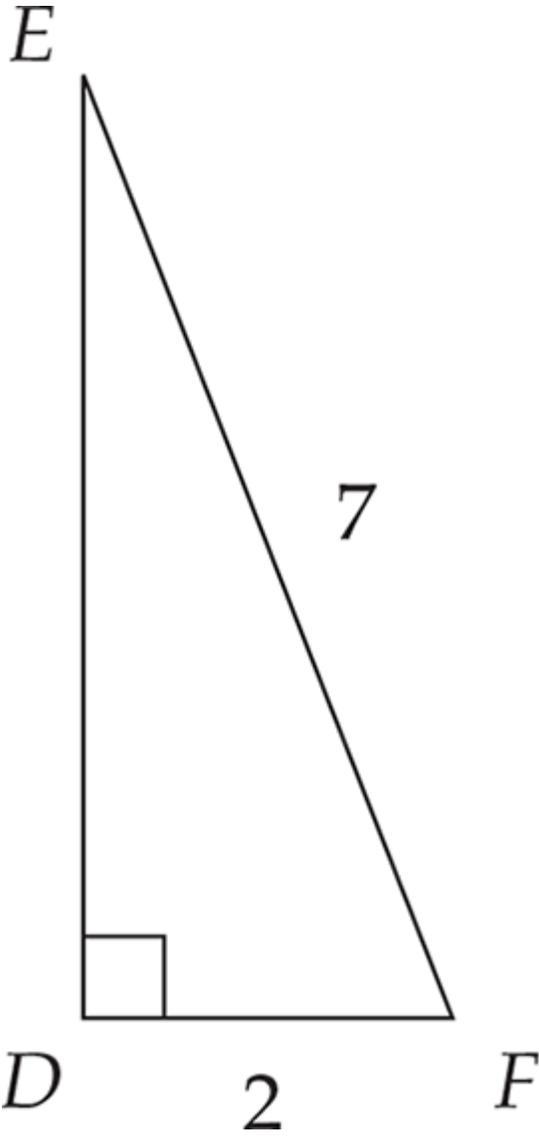


Figure 8

16.

In right triangle EDF in Figure 8, the length of \overline{DF} is 2 cm, and the length of \overline{EF} is 7 cm. What is the measure of $\angle EFD$, to the nearest hundredth of a degree?

- A. 15.95°
- B. 16.6°
- C. 73.40°
- D. 90°
- E. 99.9°

17. If $f(x) = x^2 - 7$, the $nf(a - 3)$ is

- A. $a^2 - 6a - 16$

B. $a^2 - 10$

C. $a^2 + 21$

D. $a^2 - 6a + 2$

E. $2a - 13$

18. Given point $A(-3, -8)$, If the midpoint of segment AB is $(1, -5)$, what are the coordinates of point B ?

A. $(5, -2)$

B. $(4, -2)$

C. $(-1, -6.5)$

D. $(-2, -2)$

E. $(-1, -1.5)$

19. The area of the triangle with coordinates $(1, 2)$, $(5, 5)$, and $(k, 2)$ is 15 square units. What is a possible value for k ?

A. -10

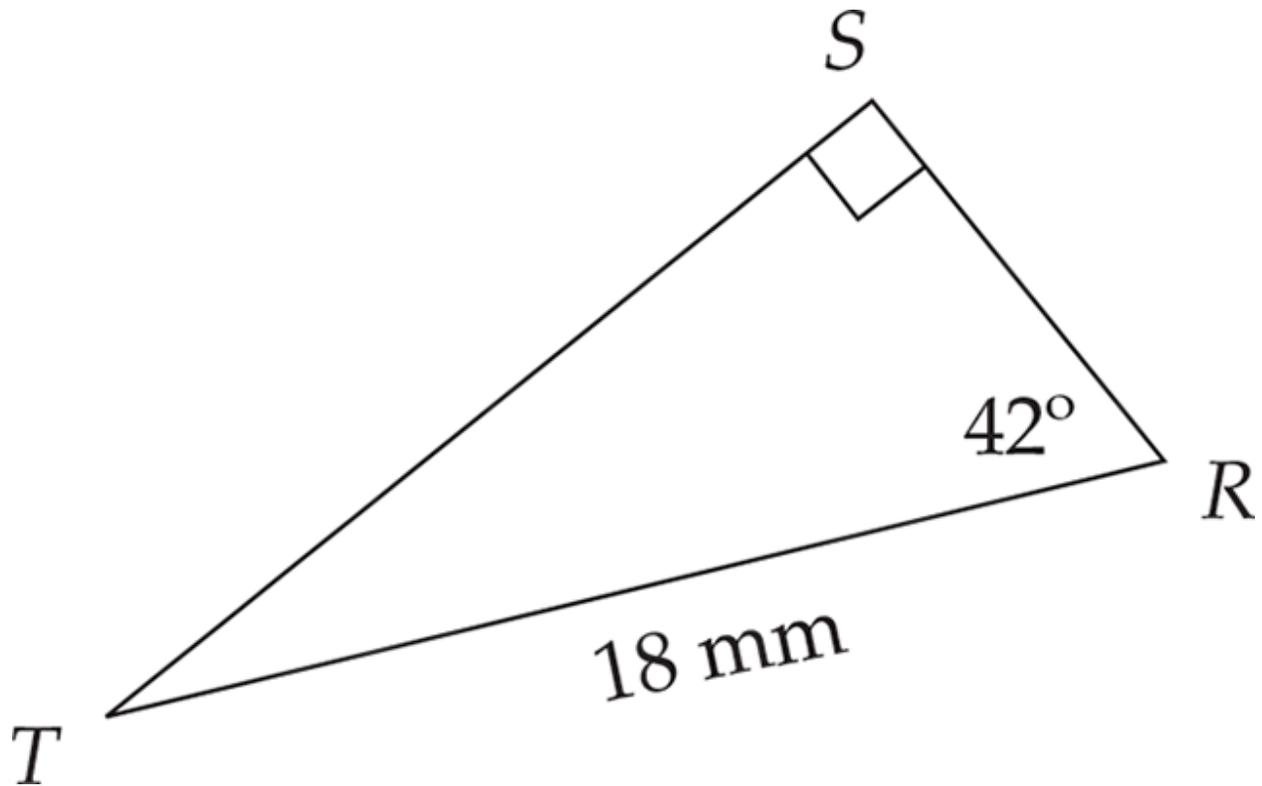
B. -9

C. -5

D. 5

E. 6

20.



Given right triangle RST in Figure above, what is the length of \overline{ST} , to the nearest hundredth?

- A. 12.04 mm
- B. 13.38 mm
- C. 16.21 mm
- D. 24.22 mm
- E. 26.90 mm