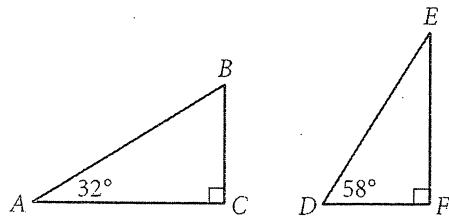


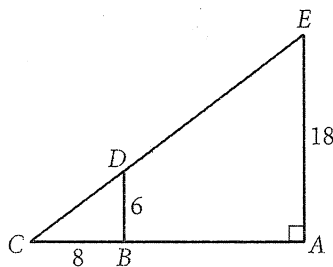
16



Triangles ABC and DEF are shown above. Which of the following is equal to the ratio $\frac{BC}{AB}$?

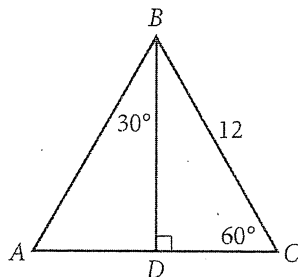
- A) $\frac{DE}{DF}$
 B) $\frac{DF}{DE}$
 C) $\frac{DF}{EF}$
 D) $\frac{EF}{DE}$

18



In the figure above, \overline{BD} is parallel to \overline{AE} . What is the length of \overline{CE} ?

19

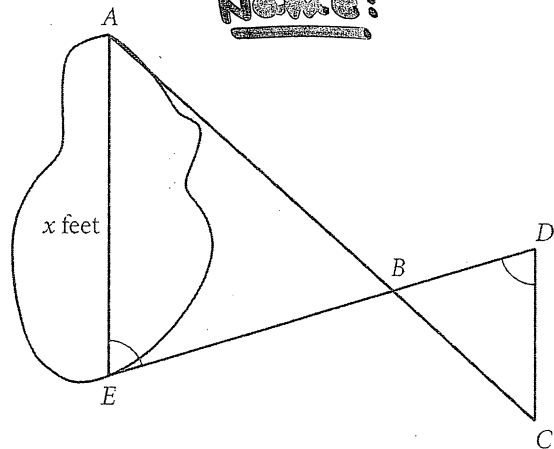


In $\triangle ABC$ above, what is the length of \overline{AD} ?

- A) 4
 B) 6
 C) $6\sqrt{2}$
 D) $6\sqrt{3}$

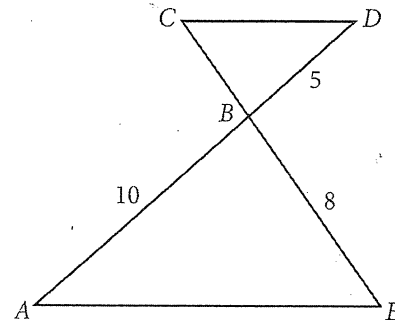
17

Name: _____



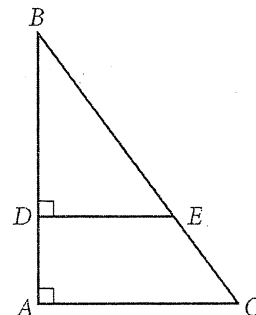
A summer camp counselor wants to find a length, x , in feet, across a lake as represented in the sketch above. The lengths represented by AB , EB , BD , and CD on the sketch were determined to be 1800 feet, 1400 feet, 700 feet, and 800 feet, respectively. Segments AC and DE intersect at B , and $\angle AEB$ and $\angle CDB$ have the same measure. What is the value of x ?

18



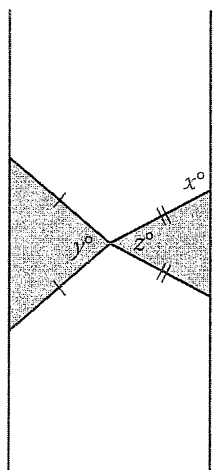
In the figure above, $\overline{AE} \parallel \overline{CD}$ and segment AD intersects segment CE at B . What is the length of segment CE ?

36



In the figure above, $\tan B = \frac{3}{4}$. If $BC = 15$ and $DA = 4$, what is the length of \overline{DE} ?

18



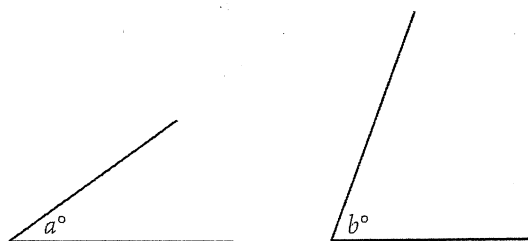
Note: Figure not drawn to scale.

Two isosceles triangles are shown above. If $180 - z = 2y$ and $y = 75$, what is the value of x ?

20

In triangle ABC , the measure of $\angle B$ is 90° , $BC = 16$, and $AC = 20$. Triangle DEF is similar to triangle ABC , where vertices D , E , and F correspond to vertices A , B , and C , respectively, and each side of triangle DEF is $\frac{1}{3}$ the length of the corresponding side of triangle ABC . What is the value of $\sin F$?

23

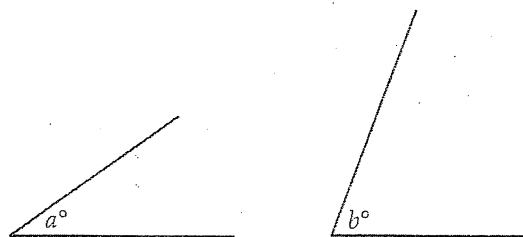


Note: Figures not drawn to scale.

The angles shown above are acute and $\sin(a^\circ) = \cos(b^\circ)$. If $a = 4k - 22$ and $b = 6k - 13$, what is the value of k ?

- A) 4.5
- B) 5.5
- C) 12.5
- D) 21.5

23

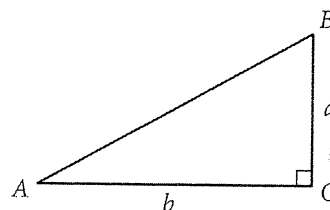


Note: Figures not drawn to scale.

The angles shown above are acute and $\sin(a^\circ) = \cos(b^\circ)$. If $a = 4k - 22$ and $b = 6k - 13$, what is the value of k ?

- A) 4.5
- B) 5.5
- C) 12.5
- D) 21.5

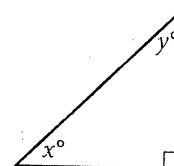
26



Given the right triangle ABC above, which of the following is equal to $\frac{b}{a}$?

- A) $\sin A$
- B) $\sin B$
- C) $\tan A$
- D) $\tan B$

27



In the triangle above, the sine of x° is 0.6. What is the cosine of y° ?