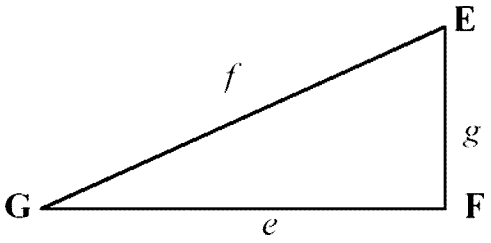
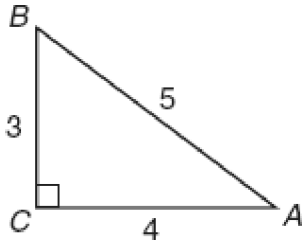
Right Triangle Trig EOC Rev (unit 3) **Name:** _____

1. What is the tangent of $\angle G$ in the triangle below?



A. $\frac{g}{e}$ B. $\frac{e}{g}$ C. $\frac{g}{f}$ D. $\frac{e}{f}$

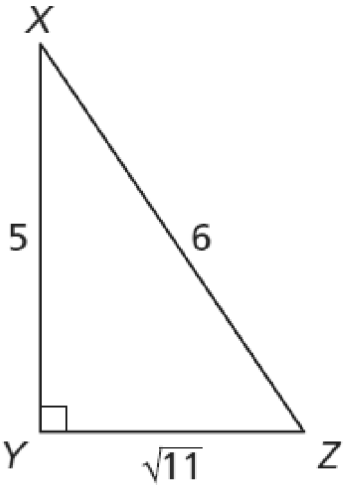
2. Triangle *ABC* is shown below.



What is the cosine of angle *B*?

A. $\frac{3}{5}$ B. $\frac{4}{5}$ C. $\frac{5}{4}$ D. $\frac{5}{3}$

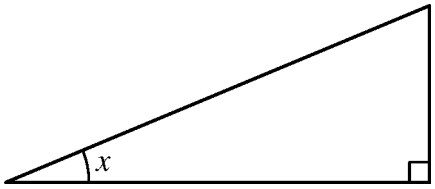
3. Study the triangle below.



What is the cosine of $\angle X$?

A. $\frac{5}{6}$ B. $\frac{\sqrt{11}}{6}$ C. $\frac{\sqrt{11}}{5}$ D. $\frac{6}{5}$

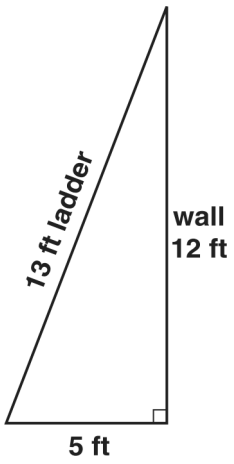
4. In the figure below, if $\sin x = \frac{5}{13}$, what are $\cos x$ and $\tan x$?



A. $\cos x = \frac{12}{13}$ and $\tan x = \frac{5}{12}$ B. $\cos x = \frac{12}{13}$ and $\tan x = \frac{12}{5}$

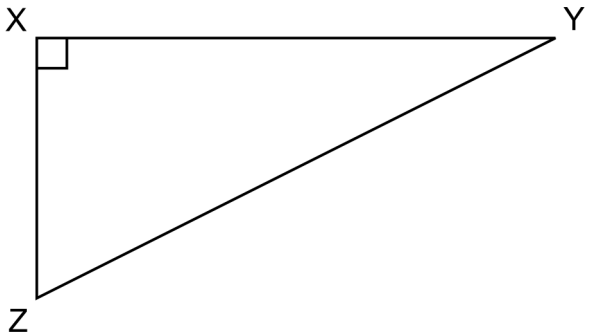
C. $\cos x = \frac{13}{12}$ and $\tan x = \frac{5}{12}$ D. $\cos x = \frac{13}{12}$ and $\tan x = \frac{13}{5}$

5. A 13-foot ladder is leaning against a brick wall. The top of the ladder touches the wall 12 feet (ft) above the ground. The bottom of the ladder is 5 ft from the bottom of the wall. What is the sine of the angle formed by the ground and the base of the ladder?



A. $\frac{5}{12}$ B. $\frac{5}{13}$ C. $\frac{12}{13}$ D. $\frac{13}{5}$

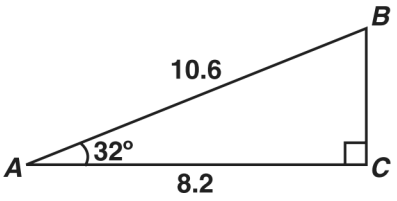
6. Use the triangle to answer the question.



Which ratio represents the tangent of angle Z?

A. $\frac{XY}{XZ}$ B. $\frac{XY}{YZ}$ C. $\frac{XZ}{XY}$ D. $\frac{XZ}{YZ}$

7. Right triangle *ABC* is pictured below.

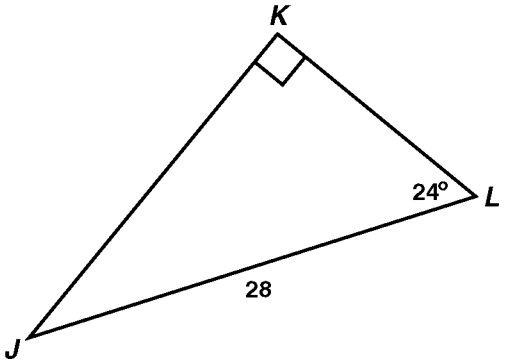


Which equation gives the correct value for *BC*?

A. $\sin 32^\circ = \frac{BC}{8.2}$ B. $\cos 32^\circ = \frac{BC}{10.6}$

C. $\tan 58^\circ = \frac{8.2}{BC}$ D. $\sin 58^\circ = \frac{BC}{10.6}$

8. Triangle *JKL* is shown below.



Which equation should be used to find the length of $\overline{JK}$?

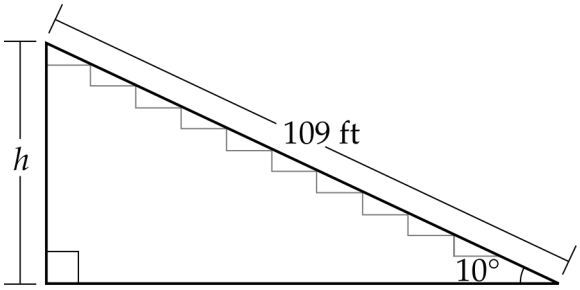
A. $\sin 24^\circ = \frac{JK}{28}$ B. $\sin 24^\circ = \frac{28}{JK}$

C. $\cos 24^\circ = \frac{JK}{28}$ D. $\cos 24^\circ = \frac{28}{JK}$

9. A 24-foot ladder is leaning against a building. The base of the ladder is 9 feet from the building. If α is the angle formed by the ladder and the ground, which equation could be used to find the measure of α?

A. $\sin \alpha = \frac{24}{9}$ B. $\cos \alpha = \frac{9}{24}$ C. $\cos \alpha = \frac{24}{9}$ D. $\sin \alpha = \frac{9}{24}$

10. The escalator shown below is 109 feet long and makes an angle of 10° with the floor.



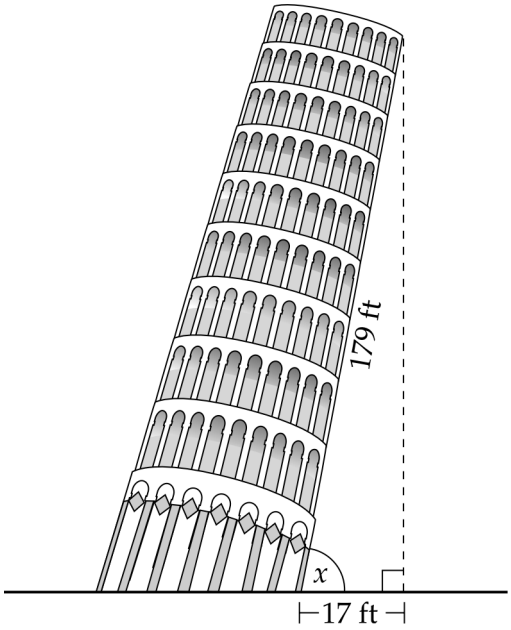
Note: The figure is not drawn to scale.

Which trigonometric ratio should be used to find the height (h) of the escalator?

A. $\sin 10^\circ = \frac{h}{109}$ B. $\cos 10^\circ = \frac{h}{109}$

C. $\sin 10^\circ = \frac{109}{h}$ D. $\cos 10^\circ = \frac{109}{h}$

11. An object dropped from the top of the Leaning Tower of Pisa lands 17 feet from the base.

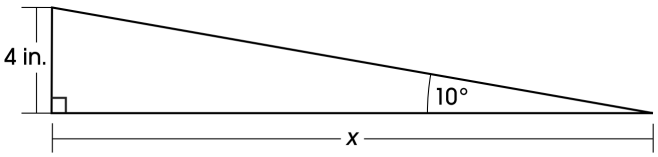


Note: The figure is not drawn to scale.

Which of these equations should be used to determine the angle (x) that the Leaning Tower of Pisa makes with the ground?

A. $\cos x = \frac{17}{179}$ B. $\cos x = \frac{179}{17}$ C. $\sin x = \frac{17}{179}$ D. $\sin x = \frac{179}{17}$

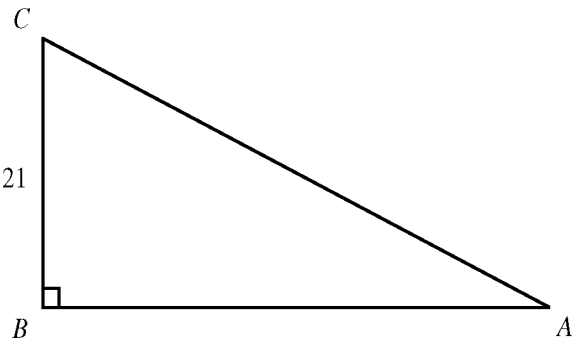
12. A ramp is being built next to a 4-inch-high sidewalk, as shown in the diagram below.



Which trigonometric relationship could be used to find the value of x?

A. $\cos 10^\circ = \frac{4}{x}$ B. $\cos 10^\circ = \frac{x}{4}$ C. $\tan 10^\circ = \frac{4}{x}$ D. $\tan 10^\circ = \frac{x}{4}$

13. In the figure below, $\sin A = 0.7$.



What is the length of $\overline{AC}$?

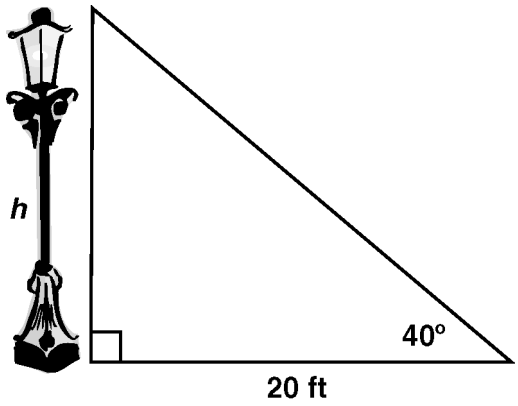
A. 14.7 B. 21.7 C. 30 D. 32

14. The short leg of a right triangle is 10 meters and the acute angles measure 25° and 65°. Use trigonometry and a calculator to find the measures of the longer leg of the right triangle.

A. 10 meters B. 11.03 meters

C. 18.66 meters D. 21.45 meters

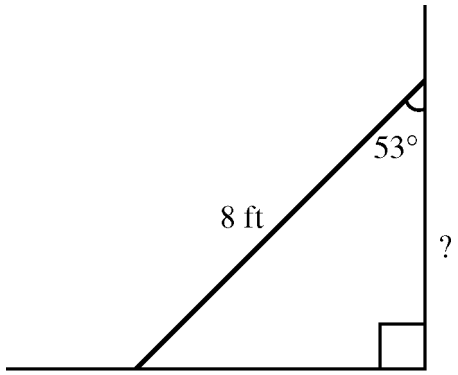
15. Approximately how many feet tall is the streetlight?



$\sin 40^\circ \approx 0.64$
$\cos 40^\circ \approx 0.77$
$\tan 40^\circ \approx 0.84$

A. 12.8 B. 15.4 C. 16.8 D. 23.8

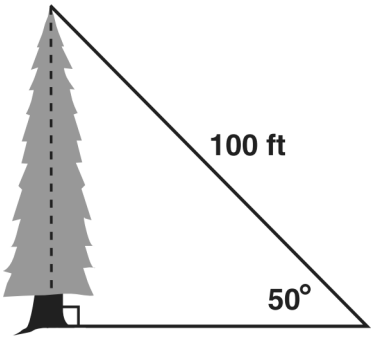
16. The diagram shows an 8-foot ladder leaning against a wall. The ladder makes a 53° angle with the wall. Which is closest to the distance up the wall the ladder reaches?



$\sin 53^\circ \approx 0.80$
$\cos 53^\circ \approx 0.60$
$\tan 53^\circ \approx 1.33$

A. 3.2 ft B. 4.8 ft C. 6.4 ft D. 9.6 ft

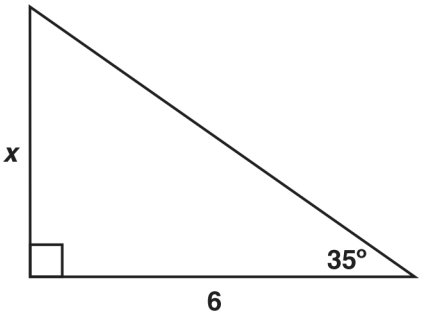
17. What is the approximate height, in feet, of the tree in the figure below?



$\sin 50^\circ \approx 0.766$
$\cos 50^\circ \approx 0.643$
$\tan 50^\circ \approx 1.192$

A. 64.3 B. 76.6 C. 119.2 D. 130.5

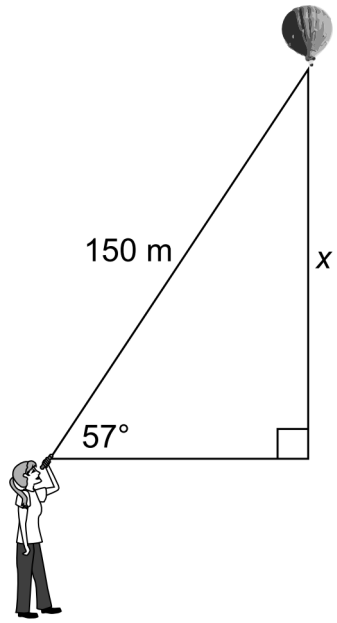
18. What is the approximate value of x in the triangle below?



$\sin 35^\circ \approx 0.57$
$\cos 35^\circ \approx 0.82$
$\tan 35^\circ \approx 0.7$

A. 3.4 units B. 4.2 units C. 4.9 units D. 7.3 units

19. **Use the diagram to answer the question.**

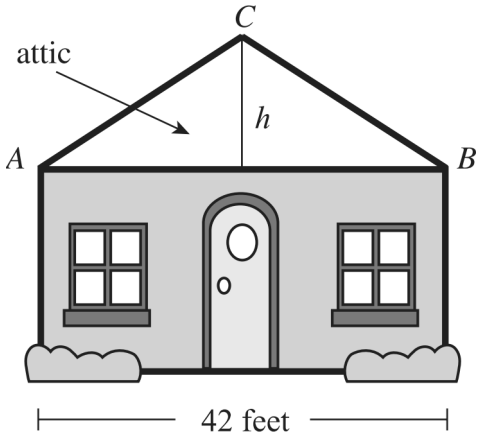


Note: Not to scale

Diana looks up at an angle of 57° and sees a hot air balloon 150 meters away. To the nearest meter, what is the value of x, the height of the hot air balloon above Diana's head?

A. 82 meters B. 126 meters C. 179 meters D. 231 meters

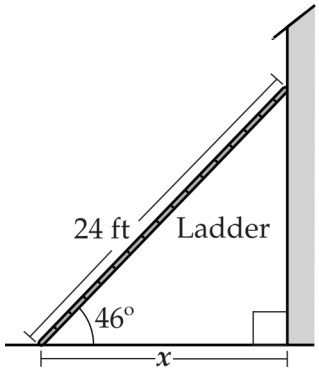
20. The figure below shows a house with an attic, represented by $\triangle ABC$ with $AC = BC$. The distance from A to B is 42 feet. The slope (commonly referred to as the pitch) of the roof is $\frac{2}{3}$.



What is the height, h, of the attic?

A. 14 feet B. 28 feet C. 32 feet D. 63 feet

21. A ladder leaning against a house is shown below.

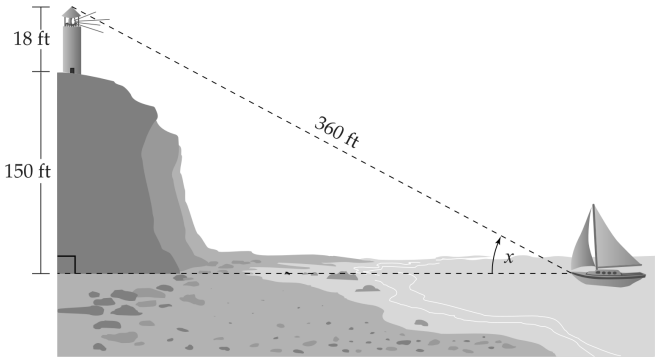


Note: The figure is not drawn to scale.

What is the distance (x) from the base of the ladder to the house? Round the answer to the nearest foot.

A. 13 feet B. 17 feet C. 21 feet D. 36 feet

22. A lighthouse, which is 18 feet high, stands on a cliff that is 150 feet above sea level. The distance from the top of the lighthouse to a sailboat on the ocean is 360 feet.

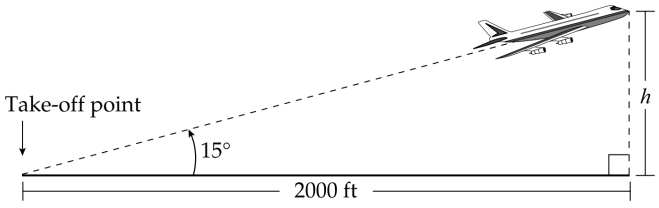


Note: The figure is not drawn to scale.

What is the angle of elevation (x) from the sailboat to the top of the lighthouse? Round the answer to the nearest degree.

A. 25° B. 28° C. 62° D. 65°

23. An airplane makes a 15° angle of elevation from the runway when it takes off. The airplane pictured below is 2,000 feet along the ground from its take-off point.

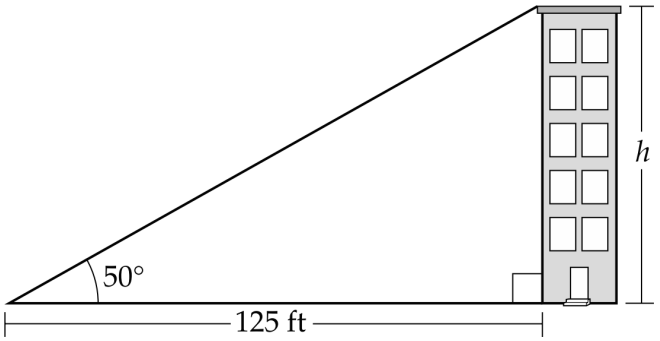


Note: The figure is not drawn to scale.

At what height (h) is the airplane? Round the answer to the nearest foot.

A. 500 feet B. 518 feet C. 536 feet D. 550 feet

24. From a point 125 feet from the base of a building, the angle of elevation from the ground to the top of the building is 50°.

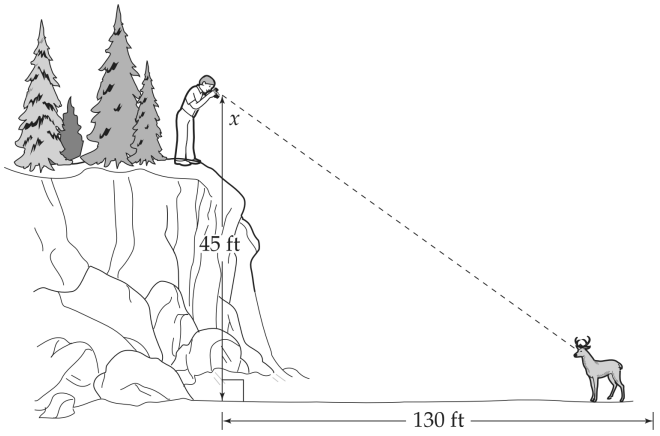


Note: The figure is not drawn to scale.

What is the height (h) of the building? Round the answer to the nearest foot.

A. 105 feet B. 149 feet C. 163 feet D. 194 feet

25. A tourist views a deer from a height of 45 feet. The horizontal distance between the tourist and the deer is 130 feet.



Note: The figure is not drawn to scale.

At what angle (x) should the tourist hold his camera to photograph the deer? Round the answer to the nearest degree.

A. 19° B. 45° C. 71° D. 138°

26. James is standing 10 meters away from Samantha.

- A bird is located in the sky at a point between where James and Samantha are standing.
- James is looking up at the bird at an angle of elevation of 74°.
- Samantha is looking up at the bird at an angle of elevation of 47°.

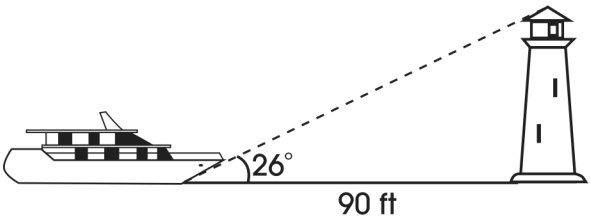
Approximately how far is the bird from Samantha?

A. 7.6 meters B. 8.5 meters C. 11.2 meters D. 13.1 meters

27. From a point 100 feet from the base of a building, Angie looks up at a 40° angle to the top of a building. She walks 20 feet closer to the building. At *approximately* what angle must Angie now look up to see the top of the building?

A. 32° B. 46° C. 60° D. 77°

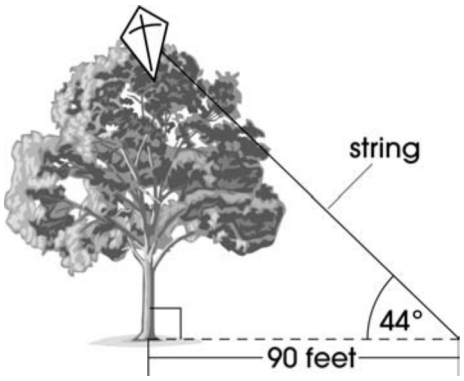
28. A yacht is anchored 90 feet offshore from the base of a lighthouse. The angle of elevation from the boat to the top of the lighthouse is 26 degrees. The distance between the yacht and the top of the lighthouse is about 100 feet.



Which of these is nearest to the height of the lighthouse?

A. 25 feet B. 45 feet C. 110 feet D. 135 feet

29. Susan is flying a kite behind her house. She drops her string holder, and the kite gets caught in the top of a tree.



If the string makes a 44° angle with the ground, and the holder is 90 feet from the base of the tree, how tall is the tree, rounded to the nearest whole foot?

A. 63 feet B. 65 feet C. 74 feet D. 87 feet

Right Triangle Trig EOC Rev (unit 3) XXXX-XX-XX

1.
Answer: A

2.
Answer: A

3.
Answer: A

4.
Answer: A

5.
Answer: C

6.
Answer: A

7.
Answer: C

8.
Answer: A

9.
Answer: A

10.
Answer:

11.
Answer:

12.
Answer: C

13.
Answer: C

14.
Answer: D

15.
Answer: C

16.
Answer: B

17.
Answer: B

18.
Answer: B

19.
Answer: B

20.
Answer: A

21.
Answer:

22.
Answer:

23.
Answer:

24.
Answer:

25.
Answer:

26.
Answer: C

27.
Answer: B

28.
Answer: B

29.
Answer: D