

Key

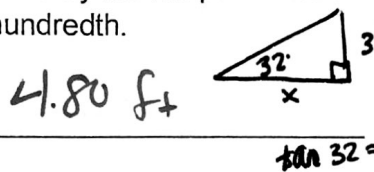
Name _____ Date _____ Class _____

LESSON
8-2

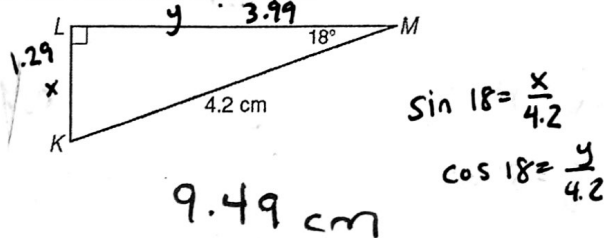
Problem Solving

Trigonometric Ratios

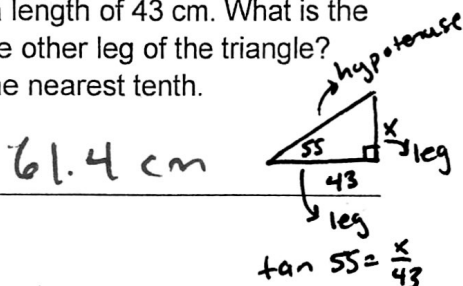
1. A ramp is used to load a 4-wheeler onto a truck bed that is 3 feet above the ground. The angle that the ramp makes with the ground is 32° . What is the horizontal distance covered by the ramp? Round to the nearest hundredth.



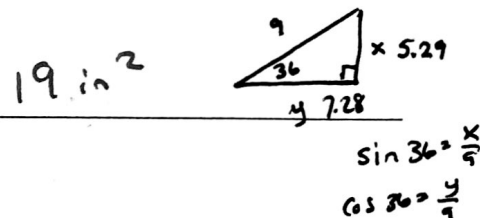
2. Find the perimeter of the triangle. Round to the nearest hundredth.



3. A right triangle has an angle that measures 55° . The leg adjacent to this angle has a length of 43 cm. What is the length of the other leg of the triangle? Round to the nearest tenth.



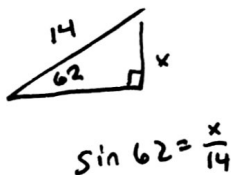
4. The hypotenuse of a right triangle measures 9 inches, and one of the acute angles measures 36° . What is the area of the triangle? Round to the nearest square inch.



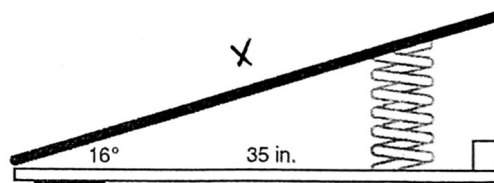
Choose the best answer.

5. A 14-foot ladder makes a 62° angle with the ground. To the nearest foot, how far up the house does the ladder reach?

- A 6 ft
B 7 ft
C 12 ft
D 16 ft



6. To the nearest inch, what is the length of the springboard shown below?

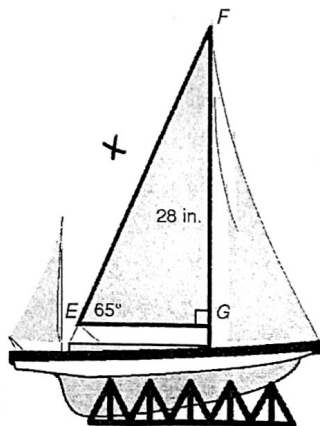


- F 24 in.
G 36 in.
H 38 in.
J 127 in.

$\cos 16 = \frac{35}{x}$

7. What is EF , the measure of the longest side of the sail on the model? Round to the nearest inch.

- A 31 in**
B 35 in.
C 40 in.
D 60 in.

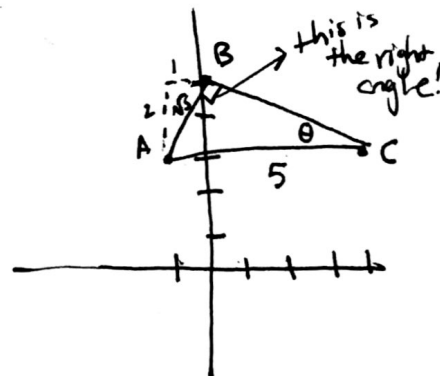


$\sin 65 = \frac{28}{x}$

8. Right triangle ABC is graphed on the coordinate plane and has vertices at $A(-1, 3)$, $B(0, 5)$, and $C(4, 3)$. What is the measure of $\angle C$ to the nearest degree?

- F 27°**
G 29°
H 32°
J 43°

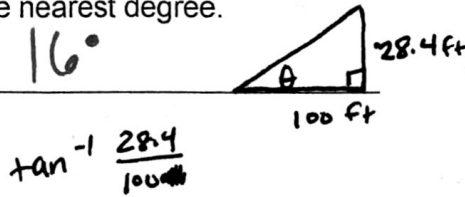
$\sin^{-1} \frac{2}{5}$



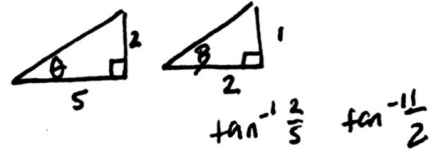
Problem Solving

Solving Right Triangles

1. A road has a grade of 28.4%. This means that the road rises 28.4 ft over a horizontal distance of 100 ft. What angle does the hill make with a horizontal line? Round to the nearest degree.



2. Pet ramps for loading larger dogs into vehicles usually have slopes between $\frac{2}{5}$ and $\frac{1}{2}$. What is the range of angle measures that most pet ramps make with a horizontal line? Round to the nearest degree.



22° to 27°

Use the side view of a water slide for Exercises 3 and 4.

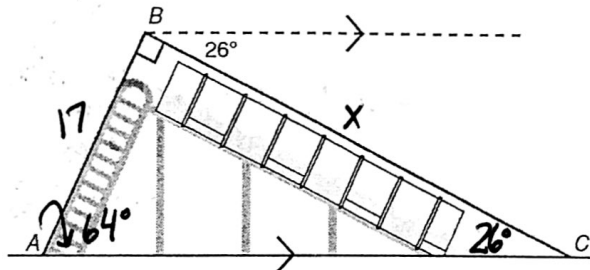
The ladder, represented by \overline{AB} , is 17 feet long.

3. What is the measure of angle A, the angle that the ladder makes with a horizontal line?

64°

4. What is BC, the length of the slide? Round to the nearest tenth of a foot.

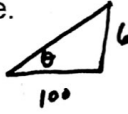
34.9 ft
↳ 35 ft



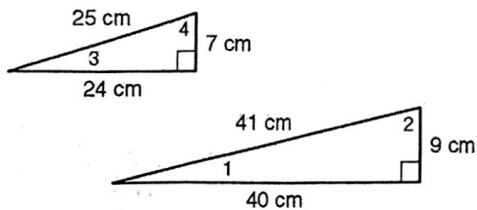
$\tan 64^\circ = \frac{x}{17}$

Choose the best answer.

5. Janelle sets her treadmill grade to 6%. What is the angle that the treadmill surface makes with a horizontal line? Round to the nearest degree.

A 3° C 12° 
 B 4° D 31°

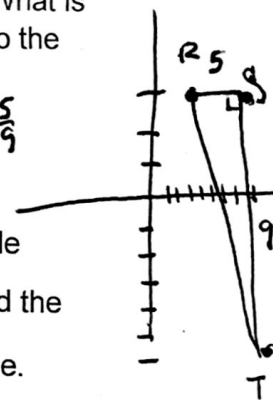
7. If $\cos A = 0.28$, which angle in the triangles below is $\angle A$?



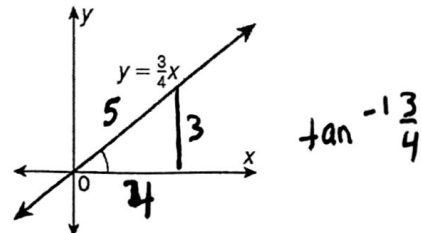
- A $\angle 1$ C $\angle 3$
 B $\angle 2$ D $\angle 4$

6. The coordinates of the vertices of $\triangle RST$ are $R(3, 3)$, $S(8, 3)$, and $T(8, -6)$. What is the measure of angle T? Round to the nearest degree.

- F 18° H 61° $\tan^{-1} \frac{15}{9}$
 G 29° J 65°



8. Find the measure of the acute angle formed by the graph of $y = \frac{3}{4}x$ and the x-axis. Round to the nearest degree.



- F 37° H 49°
 G 41° J 53°