Mr. Powder   Pre-Algebra
Ditto 90   Name: _____

Find the value of x. Round lengths of segments to the nearest tenth, and angle measures to the nearest degree.

1.

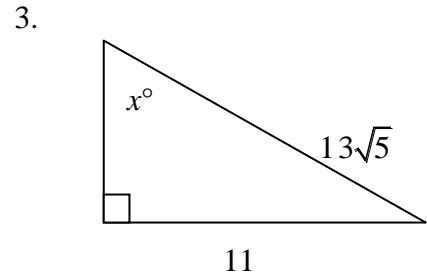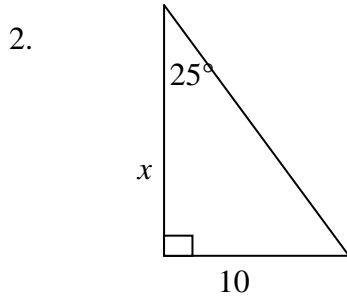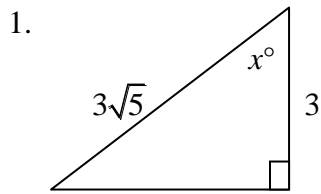$3\sqrt{5}$ $x°$ 3

2.

$25°$

x

10

3.

$x°$

$13\sqrt{5}$

11

4.

$35°$

20   x

5.

$28°$

x

50

6.

$x°$

1.369

.247
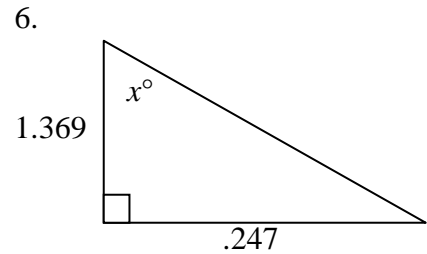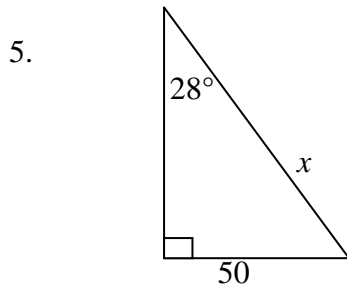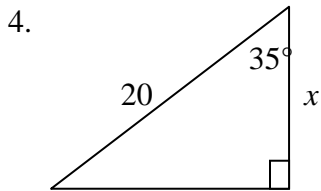
7.   In $\triangle ABC$, $m\angle b = 90$. Find $\sin C$.

8.   The lengths of the diagonals of a rhombus are 2 inches and 5 inches. Find the measures of the angles of the rhombus to the nearest degree.

9.   Two office buildings are 51 meters apart. The height of the taller building is 207 meters. The angle of depression from the top of the taller building to the top of the shorter building is 15°. Find the height of the shorter building.

15°

51 m   207 m

not to scale
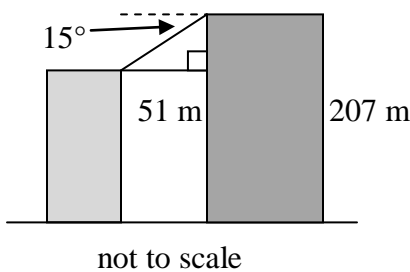
10. A surveyor is 980 feet from the base of the world's tallest fountain at Fountain hills, Arizona. The angle of elevation to the top of the column of water is 29.7°. His angle measuring device is at the same level as the base of the fountain. Find the height of the column of water to the nearest 10 feet.

not to scale

29.7°
980 ft
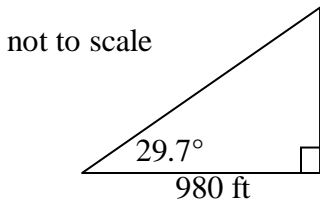
11. On the observation platform in the crown of the Statue of Liberty, Miguel is approximately 250 feet above the ground. He sights a ship in New York Harbor and measures the angle of depression as 18°. Find the distance from the ship to the base of the statue.

12. A meteorologist measures the angle of elevation of a weather balloon as 41°. A radio signal from the balloon indicates that it is 1503 meters from her location. How high is the weather balloon above the ground?

13. The world's tallest unsupported flagpole is a 282 foot tall steel pole in Surrey, British Columbia. The shortest shadow cast by the pole during the year is 137 feet long. What is the angle of elevation of the sun when the shortest shadow is cast?

14. A blimp is flying to cover a football game. The pilot sights the stadium at a 7° angle of depression. The blimp is flying at an altitude of 400 meters. How many kilometers is the blimp from the point 400 meters to the stadium? Round your answer to the nearest tenth.