March 21 Assignment (HW #35)

1. I will be pushing the Quiz to Thursday
2. I will be teaching the material for the original HW #35 tomorrow (Wednesday)
3. This assignment is a review assignment and will help to prepare you for the quiz

Part A: SOHCAHTOA (answer in red)

Find the measure of each angle indicated. Round to the nearest tenth.

1) \( \angle C = 22.6^\circ \)
2) \( \angle C = 17.1^\circ \)
3) \( \angle C = 48.2^\circ \)
4) \( \angle C = 50^\circ \)
5) \( \angle C = 28.8^\circ \)
6) \( \angle C = 36.9^\circ \)
7) \( \angle C = 66.4^\circ \)
8) \( \angle C = 45^\circ \)

Find the measure of each side indicated. Round to the nearest tenth.

9) \( x = 13.8 \)
10) \( x = 8.1 \)
11) \( x = 6 \)
12) \( x = 5.5 \)
Solve each triangle. Round answers to the nearest tenth.
Part B: Special Right Triangles (answers in red)

Find the missing side lengths. Leave your answers as radicals in simplest form.

1) \[ x \]
   \[ 45^\circ \]
   \[ 45^\circ \]
   \[ 10 \]
   \[ 5 \]

2) \[ x \]
   \[ 45^\circ \]
   \[ 45^\circ \]
   \[ 7 \]
   \[ 14 \]

3) \[ x \]
   \[ 45^\circ \]
   \[ 9 \]
   \[ 18 \]

4) \[ 9 \]
   \[ x \]
   \[ 45^\circ \]
   \[ 9 \]

5) \[ x \]
   \[ 45^\circ \]
   \[ 5\sqrt{2} \]
   \[ 2 \]

6) \[ 9\sqrt{6} \]
   \[ x \]
   \[ 45^\circ \]
   \[ 2 \]

7) \[ 9\sqrt{3} \]
   \[ 4 \]

8) \[ 5\sqrt{3} \]
   \[ 3 \]
Part C: Angle of Elevation and Depression (answers at bottom)

1. Brian’s kite is flying above a field at the end of 65 m of string. If the angle of elevation to the kite measures 70°, how high is the kite above Brian’s head?

2. From an airplane at an altitude of 1200 m, the angle of depression to a building on the ground measures 28°. Find the distance from the plane to the building.

3. From a point on the ground 12 ft from the base of a flagpole, the angle of elevation of the top of the pole measures 53°. How tall is the flagpole?

4. From a plane flying due east at 265 m above sea level, the angles of depression of two ships sailing due east measure 35° and 25°. How far apart are the ships?

5. A man flies a kite and lets out 100 feet of string. The angle of elevation of the string is 52°. How high off the ground is the kite? How far away is the man from the spot directly under the kite?

6. From the top of a vertical cliff 40 m high, the angle of depression of an object that is level with the base of the cliff is 34°. How far is the object from the base of the cliff?

7. An airplane takes off 200 yards in front of a 60 foot building. At what angle of elevation must the plane take off in order to avoid crashing into the building? Assume that the airplane flies in a straight line and the angle of elevation remains constant until the airplane flies over the building.

8. A 14 foot ladder is used to scale a 13 foot wall. At what angle of elevation must the ladder be situated in order to reach the top of the wall?

ANSWERS

1. \( x = 61 \text{ m} \)
2. \( x = 2256.9 \text{ m} \)
3. \( x = 15.9 \text{ ft} \)
4. \( x = 189.9 \text{ m} \)
5. Height of kite: 78 ft.; Ground distance from man to kite: 61.6 ft
6. \( x = 59.3 \text{ m} \)
7. The plane must climb at an angle greater than 16.7°
8. \( \theta = 68.2° \)