Work on odd #

4.2 Application Problems

7th grade questions

Solve.

1. A rope used to support a 4 ft tent pole is attached to the top of the pole and anchored in the ground at a point 2 ft from the base of the pole. Find the length of the rope.

2. A wooden beam 12 ft long is resting against a wall. The beam touches the wall at a point 8 ft above the ground. Find the distance from the base of the wall to the base of the beam.

3. How far would a submarine periscope have to be above the water to locate a ship 5 mi away? The equation for the distance in miles that the lookout can see is $d = 1.4\sqrt{h}$, where h is the height in feet above the surface of the water. Round to the nearest hundredth.

4. How far would a submarine periscope have to be above the water to locate a ship 6 mi away? The equation for the distance in miles that the lookout can see is $d = 1.4\sqrt{h}$, where h is the height in feet above the surface of the water. Round to the nearest hundredth.

5. An object is dropped from a high building. Find the distance the object has fallen when the speed reaches 64 ft/s. The equation for the distance is $v = \sqrt{64d}$, where v is the speed of the object and d is the distance.

6. An object is dropped from a plane. Find the distance the object has fallen when the speed reaches 512 ft/s. The equation for the distance is $v = \sqrt{64d}$, where v is the speed of the object and d is the distance.

7. A stone is dropped from a bridge and hits the water 1.5 s later. How high is the bridge? The equation for the distance an object falls in T seconds is given by $T = \sqrt{\frac{d}{16}}$, where d is the distance in feet. Round to the nearest hundredth.

8. A stone is dropped into a mine shaft and hits the bottom 3 s later. How deep is the mine shaft? The equation for the distance an object falls in T seconds is given by $T = \sqrt{\frac{d}{16}}$, where d is the distance in feet. Round to the nearest hundredth.

9. Find the length of a pendulum that makes one swing in 2 s. The equation for the time of one swing of a pendulum is given by $T = 2\pi\sqrt{\frac{L}{32}}$, where T is the time in seconds and L is the length in feet. Use 3.14 for π. Round to the nearest hundredth.

10. Find the length of a pendulum that makes one swing in 1.5 s. The equation for the time of one swing of a pendulum is given by $T = 2\pi\sqrt{\frac{L}{32}}$, where T is the time in seconds and L is the length in feet. Use 3.14 for π. Round to the nearest hundredth.