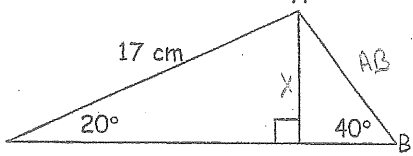


Name Key

Trig Day 2 Homework

1) Find AB.



$$\sin 20^\circ = \frac{x}{17}$$

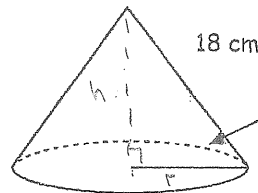
$$x = 5.814$$

$$\sin 40^\circ = \frac{x}{AB}$$

$$\sin 40^\circ = \frac{5.814}{AB}$$

$$AB = 9.046$$

2) Find the volume of the cone.



$$V = \frac{1}{3} \pi r^2 h$$

$$V = 2350.532 \text{ cm}^3$$

$$\cos 35^\circ = \frac{r}{18}$$

$$r = 14.745$$

$$\sin 35^\circ = \frac{h}{18}$$

$$h = 10.324$$

3-7 Draw a picture for each problem, then write a trig. equation and solve. Round to thousandths.

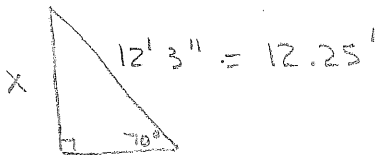
3) The angle of depression from a submarine that's 234 m above the ocean floor, to a treasure chest on the ocean floor, is 21° . Find the distance from the submarine to the treasure chest.

$$\sin 21^\circ = \frac{234}{x}$$

$$x = 652.960 \text{ m}$$



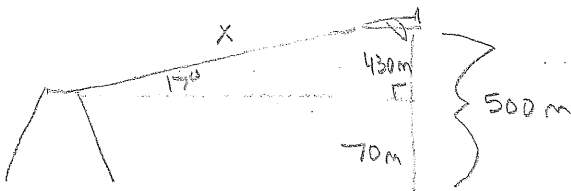
4) A support wire runs from a point on the ground to the top of a utility pole. The wire makes a 70° angle with the ground. The length of the wire is 12ft. 3in. Find the height of the utility pole.



$$\sin 70^\circ = \frac{x}{12.25}$$

$$x = 11.511 \text{ feet}$$

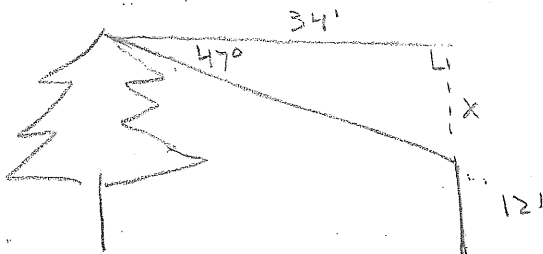
5) The angle of elevation from the top of a control tower up to a plane is 17° . At that moment, the plane is at an altitude of 500m. How far is the plane from the top of the control tower? The height of the tower is 70m.



$$\sin 17^\circ = \frac{430}{x}$$

$$x = 1470.731 \text{ m}$$

6) The angle of depression from the top of a tree to the top of a 12 ft. pole is 47° . The distance between the base of the pole and the base of the tree is 34 ft. Find the height of the tree.



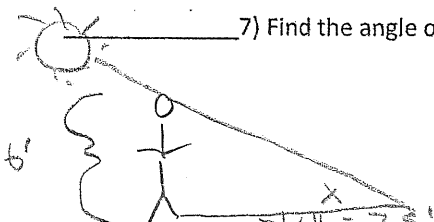
$$\text{Height Tree} = 12 + x$$

$$\tan 47^\circ = \frac{x}{34}$$

$$x = 36.461$$

$$\text{Height Tree} = 48.461 \text{ feet}$$

7) Find the angle of elevation of the sun when a 6ft. man casts a 7ft. 6in. shadow.



$$\tan x = \frac{6}{7.5}$$

$$x = 38.660^\circ$$