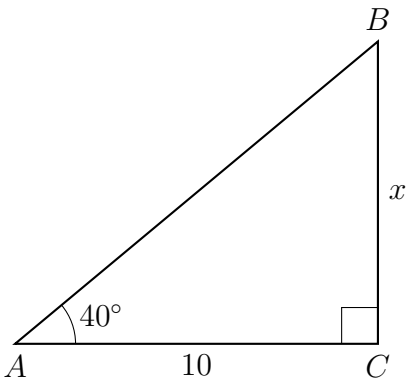
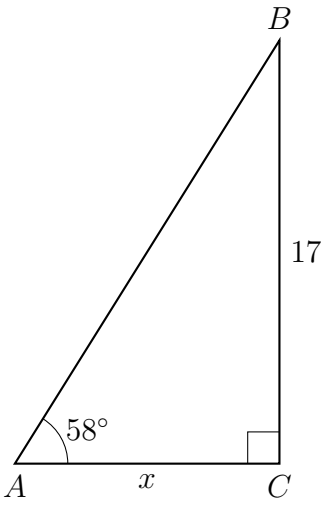
10.7 Quiz: The tangent function **CCSS.HSG.SRT.C.8**

You must write an equation before solving it. Figures are not necessarily drawn to scale.

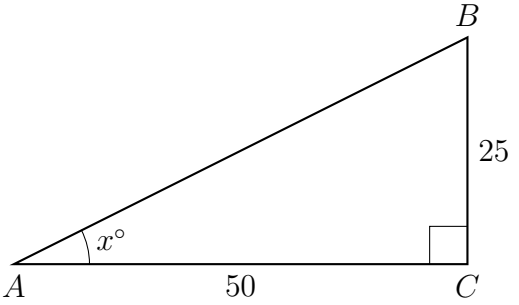
1. Given right $\triangle ABC$ with $AC = 10$, $\text{m}\angle A = 40°$. Find the value of $BC = x$ to the *nearest tenth*.



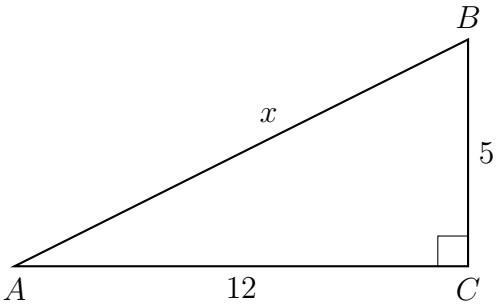
2. The right $\triangle ABC$ has a height of $BC = 17$ and $\text{m}\angle A = 58°$. Find the length of its base $AC = x$ to the *nearest tenth*.



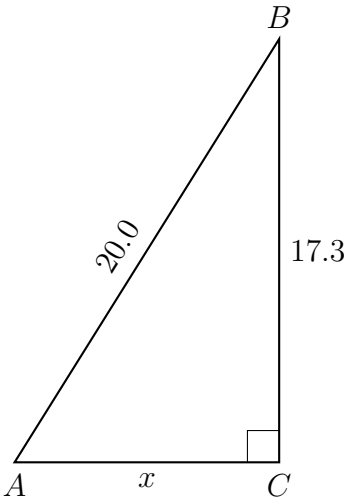
3. The lengths of the legs of right $\triangle ABC$ are $AC = 50$ and $BC = 25$. Find $\text{m}\angle A = x$ to the *nearest whole degree*.



4. The dimensions of right $\triangle ABC$ are $AC = 12$ and $BC = 5$. Find length of the hypotenuse $AB = x$.



5. The hypotenuse of right $\triangle ABC$ is 20.0 units long and the triangle's height is 17.3 units. Find the length of its base $AC = x$, to the *nearest tenth*.



Find x to the *nearest tenth*.

6. $\tan 80^\circ = \dfrac{x}{12}$

7. $\tan 30^\circ = \dfrac{10}{x}$

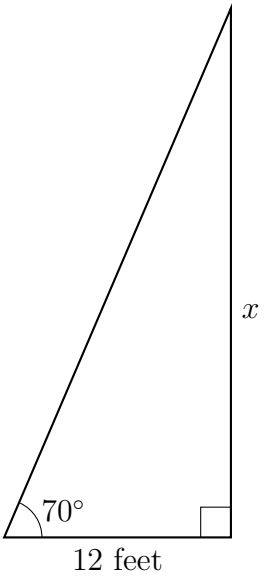
Find θ to the *nearest whole degree*.

8. $\theta = \tan^{-1}(\dfrac{7}{9})$

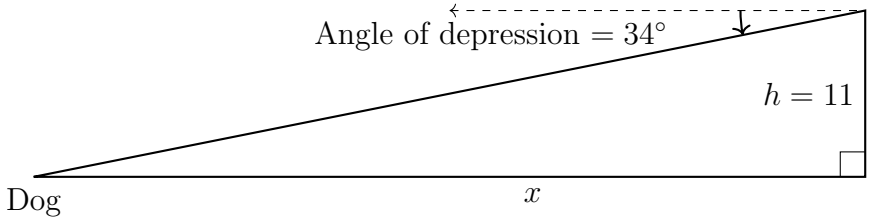
9. $\tan\theta = \dfrac{1}{1.73}$

Modeling situations with right triangles **HSG.MG.A.1**

10. A tree casts a shadow 12 feet long. The angle of elevation from the tip of the shadow to the top of the tree is 70°. To the nearest foot, how tall is the tree?



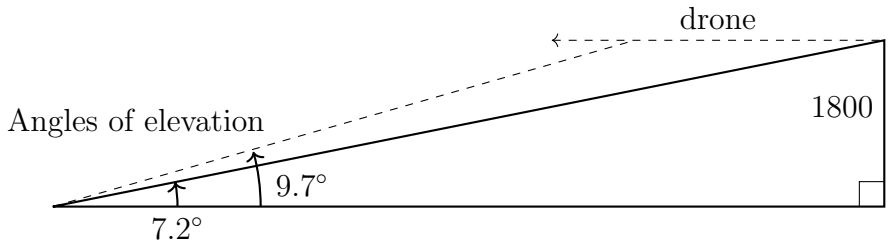
11. From the top of a hill a dog is visible at an angle of depression of 34°. If the hill is 11 meters tall, determine the distance from the dog to the base of the hill, x, to the *nearest meter*.



12. A drone flying at an altitude of 1,800 meters is observed twice. The first time the angle of elevation is 7.2° and exactly one minute later the angle of elevation is 9.7°.

    Find the distance the drone flies over the minute and its speed in kilometers per hour.

    (*not drawn to scale*)



Spicy: Radian measures

13. Convert 30° to radians, to the *nearest thousandth*.

HSN.A.Q.1 Use units in formulas

14. Convert $\frac{1}{4}\pi$ radians to degrees.