

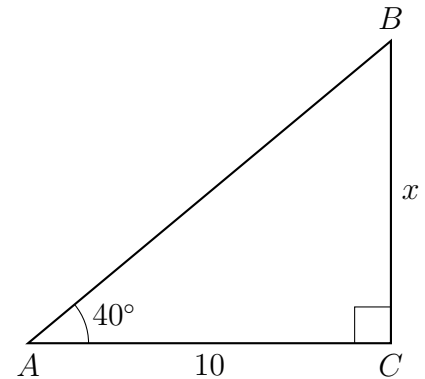
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10.7 Quiz: The tangent function

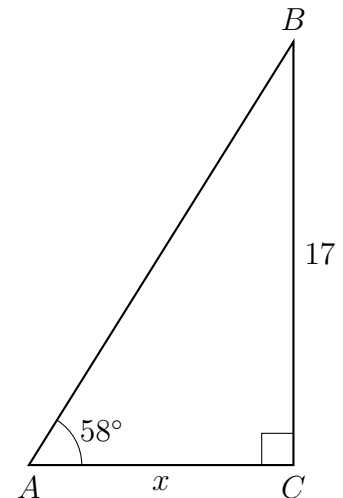
CCSS.HSG.SRT.C.8

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

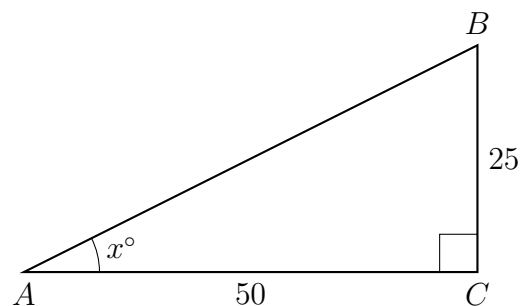
1. Given right $\triangle ABC$ with $AC = 10$, $m\angle A = 40^\circ$. Find the value of $BC = x$.



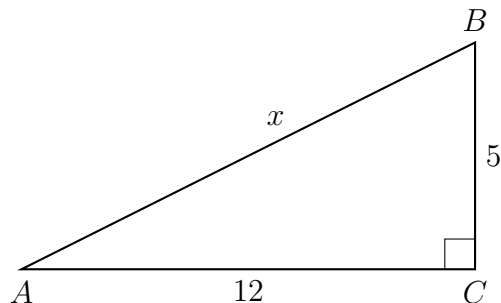
2. The right $\triangle ABC$ has a height of $BC = 17$ and $m\angle A = 58^\circ$. Find the length of its base $AC = x$.



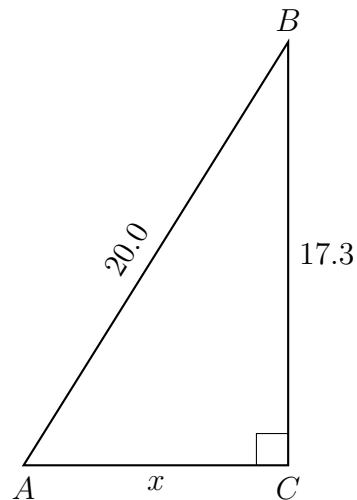
3. The lengths of the legs of right $\triangle ABC$ are $AC = 50$ and $BC = 25$. Find $m\angle A = x$.



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

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

Find θ to the *nearest whole degree*.

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

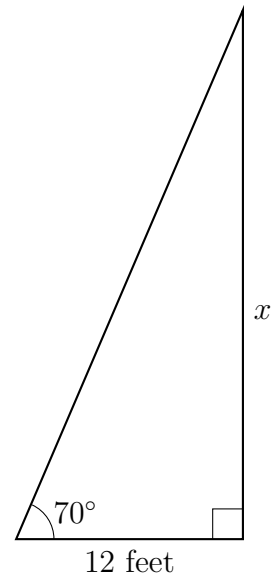
9. $\tan \theta = \frac{1}{1.73}$

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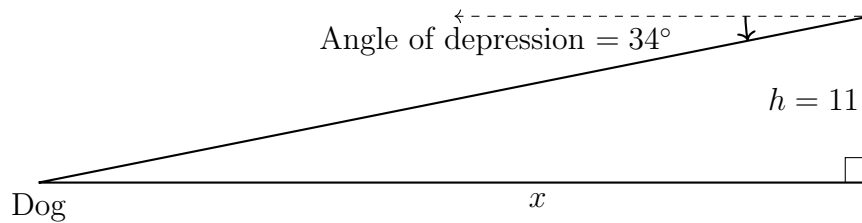
Modeling situations with right triangles

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?



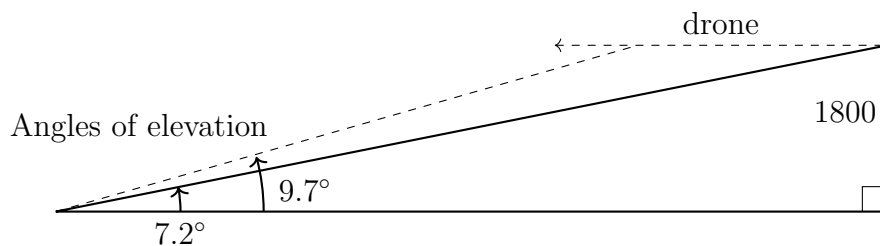
11. From the top of a hill a dog is visible at an angle of depression of 34° . If the hill is 11 meters tall, determine the distance from the dog to the base of the hill, x , to the nearest meter.



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

HSN.A.Q.1 Use units in formulas

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

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