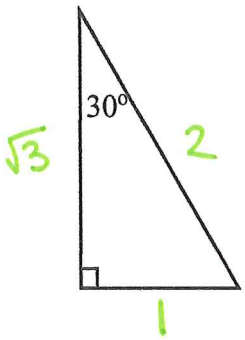
Homework – Special Right Triangles & Trig

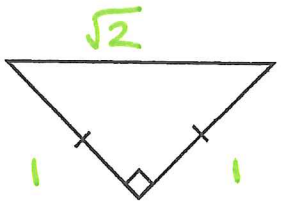
Name: Key

Fill in the side lengths of each of the special right triangles. Assume the shortest side to have a length of 1.

1.

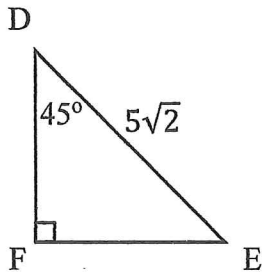


2.



Find the indicated values using the triangle provided. Simplify your answers.

3.

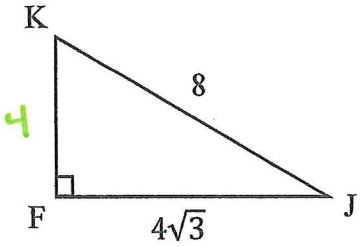


$DF =$ 5

$FE =$ 5

$tan(D) =$ 1

4.

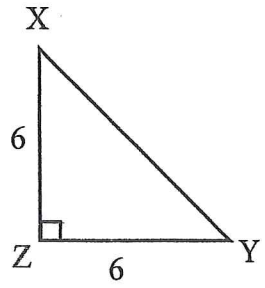


$m\angle J =$ 30°

$KF =$ 4

$sin(J) =$ $\frac{1}{2}$

5.

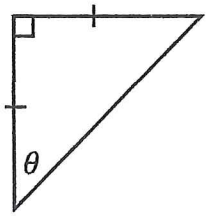


$m\angle X =$ 45°

$sin(Y) =$ $\frac{\sqrt{2}}{2}$

$cos(Y) =$ $\frac{\sqrt{2}}{2}$

6.

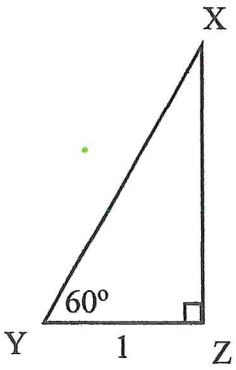


$\theta =$ 45°

$cos(\theta) =$ $\frac{\sqrt{2}}{2}$

$tan(\theta) =$ 1

7.

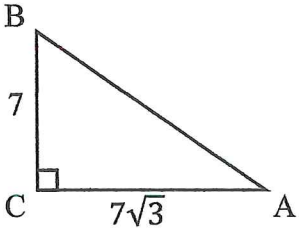


$XY =$ 2

$cos(Y) =$ $\frac{1}{2}$

$tan(Y) =$ $\sqrt{3}$

8.



$m\angle B =$ 60°

$sin(B) =$ $\frac{\sqrt{3}}{2}$

$tan(A) =$ $\frac{\sqrt{3}}{3}$

Rapid Practice

Find the exact value for each trig ratio *without* using a calculator. A picture may be helpful, but no work is required.

9. $sin(30°) = \frac{1}{2}$

10. $cos(30°) = \frac{\sqrt{3}}{2}$

11. $tan(60°) = \sqrt{3}$

12. $sin(45°) = \frac{\sqrt{2}}{2}$

Find the value for angle θ, in degrees, *without* using a calculator. A picture may be helpful, but no work is required.

13. $tan(\theta) = 1$

$\theta = 45°$

14. $tan(\theta) = \frac{\sqrt{3}}{3}$

$\theta = 30°$

15. $cos(\theta) = \frac{\sqrt{2}}{2}$

$\theta = 45°$

16. $sin(\theta) = \frac{\sqrt{3}}{2}$

$\theta = 60°$