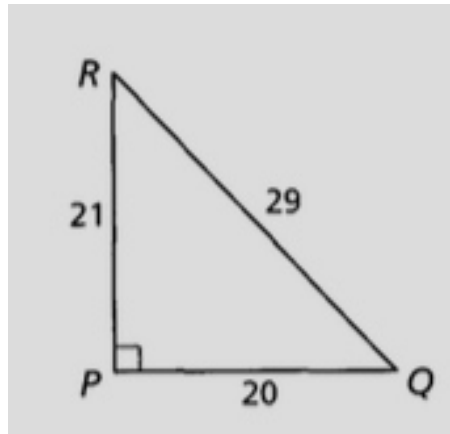


Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Assignment 08.02: Sine and Cosine of Complementary Angles

Write each trigonometric ratio as a fraction and as a decimal rounded to the nearest hundredth.



A)  $\sin R =$

B)  $\sin Q =$

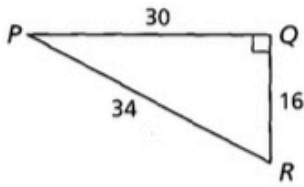
C)  $\cos R =$

D)  $\cos Q =$

E) What did you notice about the sines and cosines you found? Do you think this relationship will be true for any pair of acute angles in a right triangle? Explain.

Find the given trigonometric ratios. Write each ratio as a fraction and as a decimal rounded to the nearest hundredth.

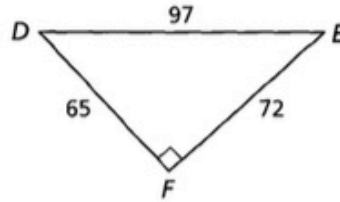
1.  $\sin R$ ,  $\cos R$



\_\_\_\_\_

\_\_\_\_\_

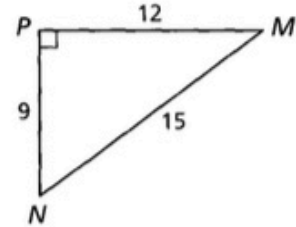
2.  $\cos D$ ,  $\cos E$



\_\_\_\_\_

\_\_\_\_\_

3.  $\sin M$ ,  $\sin N$



\_\_\_\_\_

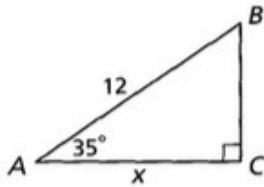
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4. Given that  $\sin 15^\circ \approx 0.259$ , write the cosine of a complementary angle. \_\_\_\_\_

5. Given that  $\cos 62^\circ \approx 0.469$ , write the sine of a complementary angle. \_\_\_\_\_

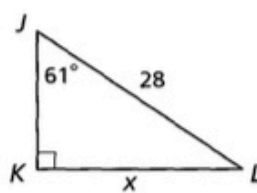
Find the value of  $x$  to the nearest tenth.

6.



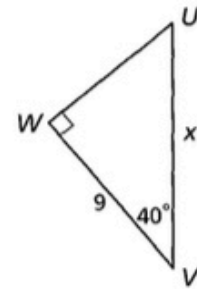
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7.



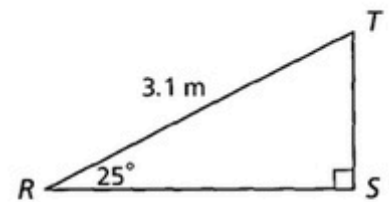
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8.



\_\_\_\_\_

9. You are building a skateboard ramp from a piece of wood that is 3.1 meters long. You want the ramp to make an angle of  $25^\circ$  with the ground. To the nearest tenth of a meter, what is the length of the ramp's base? What is its height?



\_\_\_\_\_

10. **Error Analysis** Three students were asked to find the value of  $x$  in the figure. The equations they used are shown at right. Which students, if any, used a correct equation? Explain the other students' errors and then find the value of  $x$ .

\_\_\_\_\_

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Lee's equation:  $\sin 57^\circ = \frac{x}{15}$

Jamila's equation:  $\cos 33^\circ = \frac{15}{x}$

Tyler's equation:  $\sin 33^\circ = \frac{x}{15}$