

9.5 Sine & Cosine Trigonometric Ratio CYU

Use when you get it right all by yourself

S Use when you did it all by yourself, but made a silly mistake

H Use when you could do it alone with a little help from teacher or peer

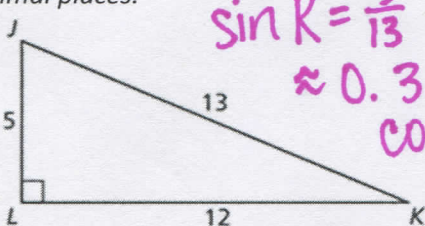
G Use when you completed the problem in a group

X Use when a question was attempted but wrong (get help)

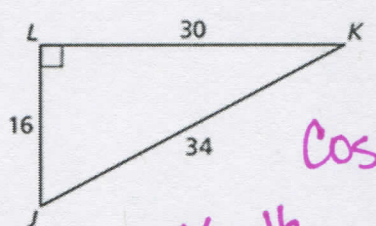
N Use when a question was not even attempted

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Sine & Cosine ratio	1, 2	3 - 5	9, 10, 12
Exact answer	1, 2	3 - 5	
Rounded answer	1, 2	3 - 8, 11	
Perimeter		11	
Real- World Application			10 - 12
Inverse Sine & Cosine		6 - 8	

Find $\sin J$, $\sin K$, $\cos J$ and $\cos K$. Write each answers as a fraction AND as a decimal rounded to four decimal places.

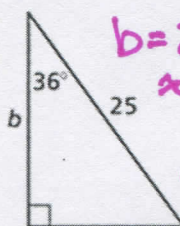
1. 

$\sin K = \frac{5}{13} \approx 0.3846$
 $\cos J = \frac{5}{13} \approx 0.3846$
 $\sin J = \frac{12}{13} \approx 0.923$
 $\cos K = \frac{12}{13} \approx 0.923$

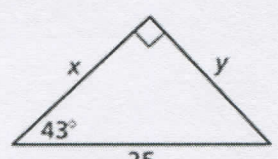
2. 

$\sin J = \frac{30}{34} \approx 0.882$
 $\cos K = \frac{30}{34} \approx 0.882$
 $\sin K = \frac{16}{34} \approx 0.4706$
 $\cos J = \frac{16}{34} \approx 0.4706$

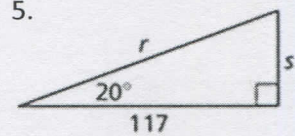
Find the value of each variable using sine and cosine. Show the set up to earn full credit. Then write your answer exact and rounded to the nearest tenth.

3. 

$b = 25(\cos 36) \approx 20.2$
 $a = 25(\sin 36) \approx 14.7$

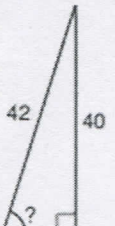
4. 

$x = 25(\cos 43) \approx 18.3$
 $y = 25(\sin 43) \approx 17.1$

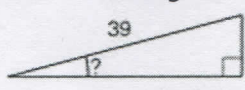
5. 

$r = \frac{117}{\cos 20} \approx 124.5$
 $s = (124.509)(\sin 20) \approx 42.6$

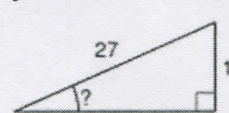
Find the measure of the indicated angle to the nearest degree. Show your set up for full credit.

6. 

72°

7. 

15°

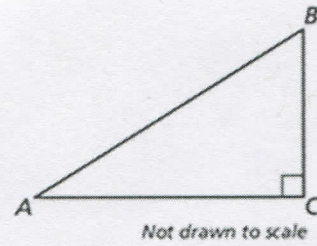
8. 

24°

9. Which statement *cannot* be true? Explain.

- A. $\sin A = 0.5$
- B. $\sin A = 1.2654$**
- C. $\sin A = 0.9962$
- D. $\sin A = \frac{3}{4}$

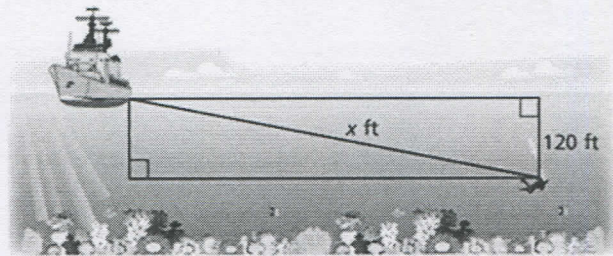
$$\frac{\text{opp}}{\text{hyp}} = \frac{6327}{5000}$$



Real-World Application

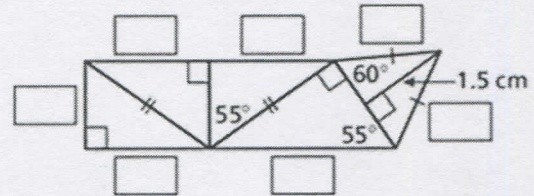
10. The angle of depression is 11° from the bottom of a boat to a deep sea diver at a depth of 120 feet. Find the distance x the diver must swim up to the boat to the nearest foot.

$$\approx 629 \text{ ft}$$



11. Find the perimeter of the figure shown. Round your answer to the nearest centimeter.

$$\approx 14 \text{ cm}$$



12. You use an extension ladder to repair a chimney that is 33 feet tall. The length of the extension ladder ranges in one-foot increments from its minimum length to its maximum length. For safety reasons, you should always use an angle of about 75.5° between the ground and your ladder.

a) Your smallest extension ladder has a maximum length of 17 feet. How high does this ladder safely reach on the chimney? Round your answer to the nearest tenth of a foot.

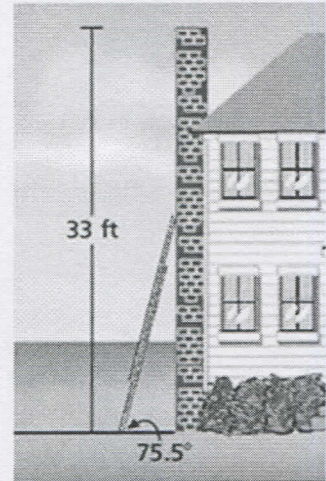
$$\approx 16.5 \text{ ft}$$

b) You place the ladder 3 feet from the base of the chimney. How many feet long should the ladder be? Round your answer to the nearest foot.

$$\approx 12 \text{ ft}$$

c) To reach the top of the chimney, you need a ladder that reaches 30 feet high. How many feet long should the ladder be? Round your answer to the nearest foot.

$$\approx 31 \text{ ft}$$



CYU Reflection: How far can you go: basic, intermediate, or advanced?

Rate your mastery level!

How confident are you with the skills this CYU covered? Circle the score you would give yourself.

● ● ● ● ● ● ● ●

1	2	3	4	5	6	7	8
Basic		Intermediate			Advanced		Solved ALL!

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