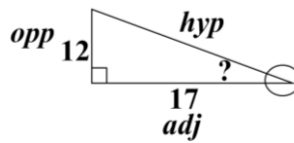
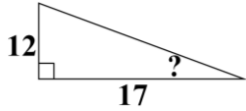


Unit 5 Review – Trigonometry

EXAMPLE:

The specifications for the side of a roof are shown below. What would the angle of elevation of the roof have to be and how would you determine it?



$$\tan(\text{Angle}) = \frac{12}{17}$$

$$\tan(\text{Angle}) = 0.7059$$

$$\begin{array}{r} 0.70588 \\ 17 \overline{) 12.00000} \\ \underline{119} \\ 10 \\ \underline{-0} \\ 100 \\ \underline{-85} \\ 150 \\ \underline{-136} \\ 140 \\ \underline{-136} \\ 40 \end{array}$$

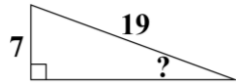
$$\tan 35 = 0.7002 \quad .7059 - .7002 = .0057 \quad \text{CLOSER!}$$

$$\tan(\text{Angle}) = 0.7059$$

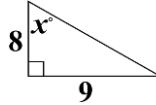
$$\tan 36 = 0.7265 \quad .7265 - 0.7059 = .0206$$

The angle of elevation is 35° .
I found it using tangent.

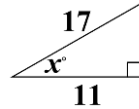
1. The specifications for a wheel ramp are shown below. What would the angle of elevation of the ramp have to be, and how would you determine it?



2. Determine the value of x to the nearest degree.

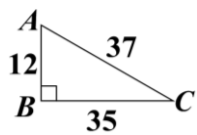


3. Determine the value of x to the nearest degree.



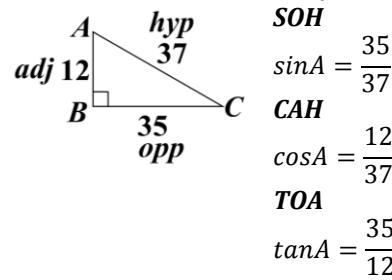
EXAMPLE:

Select all trigonometric ratios that correctly describe the relationships on the given triangle.

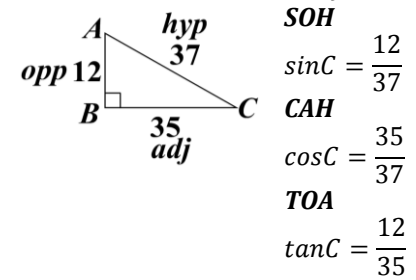


B is the right angle.
You cannot use it.
Cross out any options that use B.

Next, create the three ratios for A.



Then, create the three ratios for C.



Identify the ones that are correct and cross out the ones that aren't.

Identify the ones that are correct and cross out the ones that aren't.

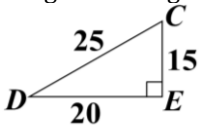
A. $\sin A = \frac{35}{37}$	F. $\cos B = \frac{12}{35}$
B. $\sin A = \frac{12}{37}$	G. $\cos C = \frac{35}{37}$
C. $\sin B = \frac{12}{37}$	H. $\tan A = \frac{12}{35}$
D. $\sin C = \frac{12}{37}$	I. $\tan A = \frac{35}{12}$
E. $\cos A = \frac{12}{37}$	J. $\tan C = \frac{35}{37}$

A. $\sin A = \frac{35}{37}$	F. $\cos B = \frac{12}{35}$
B. $\sin A = \frac{12}{37}$	G. $\cos C = \frac{35}{37}$
C. $\sin B = \frac{12}{37}$	H. $\tan A = \frac{12}{35}$
D. $\sin C = \frac{12}{37}$	I. $\tan A = \frac{35}{12}$
E. $\cos A = \frac{12}{37}$	J. $\tan C = \frac{35}{37}$

A. $\sin A = \frac{35}{37}$	F. $\cos B = \frac{12}{35}$
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D. $\sin C = \frac{12}{37}$	I. $\tan A = \frac{35}{12}$
E. $\cos A = \frac{12}{37}$	J. $\tan C = \frac{35}{37}$

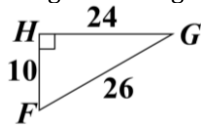
Answers: A, D, E, G, I

4. Select all trigonometric ratios that correctly describe the relationships on the given triangle.



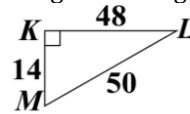
A. $\sin C = \frac{20}{25}$	F. $\cos E = \frac{15}{25}$
B. $\sin C = \frac{15}{25}$	G. $\cos E = \frac{20}{25}$
C. $\sin E = \frac{15}{25}$	H. $\tan C = \frac{15}{20}$
D. $\cos C = \frac{20}{25}$	I. $\tan C = \frac{20}{15}$
E. $\cos D = \frac{20}{25}$	J. $\tan E = \frac{20}{15}$

5. Select all trigonometric ratios that correctly describe the relationships on the given triangle.



A. $\sin F = \frac{10}{26}$	F. $\cos G = \frac{10}{26}$
B. $\sin G = \frac{24}{26}$	G. $\tan F = \frac{10}{26}$
C. $\sin G = \frac{24}{10}$	H. $\tan H = \frac{10}{24}$
D. $\cos F = \frac{10}{26}$	I. $\tan H = \frac{24}{10}$
E. $\cos F = \frac{24}{26}$	J. $\tan G = \frac{10}{24}$

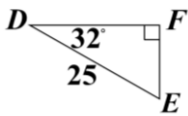
6. Select all trigonometric ratios that correctly describe the relationships on the given triangle.



A. $\sin L = \frac{48}{14}$	F. $\cos M = \frac{14}{50}$
B. $\sin L = \frac{14}{50}$	G. $\cos M = \frac{14}{48}$
C. $\sin M = \frac{14}{50}$	H. $\tan L = \frac{48}{14}$
D. $\sin M = \frac{14}{48}$	I. $\tan L = \frac{14}{48}$
E. $\cos L = \frac{14}{50}$	J. $\tan M = \frac{14}{48}$

EXAMPLE:

Use a trigonometric ratio to determine the length of *EF* to the nearest tenth.



SOH

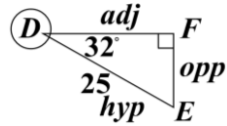
$$\sin 32 = \frac{EF}{25}$$

CAH

$$\cos 32 = \frac{DF}{25}$$

TOA

$$\tan 32 = \frac{EF}{DF}$$



The trig ratio that uses what we want (opp - EF) and the side with a number (hyp - 25) is SOH:

$$\sin 32 = \frac{EF}{25}$$

Since the missing part is on top, multiply.

$$EF = 25(\sin 32)$$

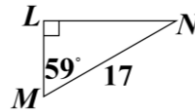
Look up $\sin 32$ on the table and plug it in:

$$EF = 25(0.5299)$$

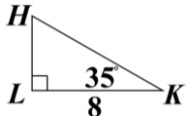
$$EF = 13.2475$$

$$EF = \boxed{13.2}$$

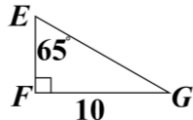
7. Use a trigonometric ratio to determine the length of *LM* to the nearest tenth.



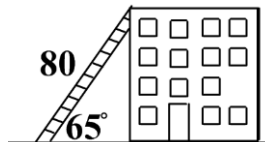
8. Use a trigonometric ratio to determine the length of *HL* to the nearest tenth.



9. Use a trigonometric ratio to determine the length of *EG* to the nearest tenth.



10. A fireman leans a 80-foot long ladder against a building. The angle of elevation of the ladder is 65°. How tall is the building? Write your answer as a decimal to the nearest foot.



Unit 5 Review - Trigonometry Answers

1. The angle of elevation is $\boxed{22^\circ}$. I found it using <u>sine</u> .	2. $x = 48^\circ$	3. $x = 50^\circ$
4. A, E, I	5. D, J	6. B, F, I
7. $LM = 8.8$	8. $HL = 5.6$	9. $EG = 11.0$
		10. $\boxed{73 \text{ ft}}$ (the problem says "nearest foot," so you should round 72.50 to 73)