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- I. Model Problems.
- II. Identifying Opposite, Adjacent and Hypotenuse
- III. Writing Sine, Cosine, Tangent Ratios
- IV. Answer Key

Web Resources

SOHCAHTOA

 www.mathwarehouse.com/trigonometry/sine-cosine-tangent-home.php



Right Triangle Calculator

www.mathworksheetsgo.com/trigonometry-calculators/right-triangle-calculator-online.php



Sine Cosine Calculator

www.mathworksheetsgo.com/trigonometry-calculators/sine-cosine-calculator-online.php

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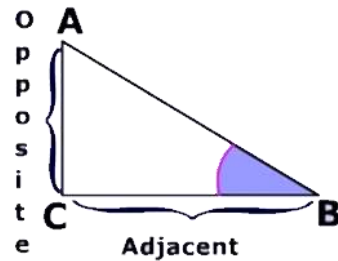
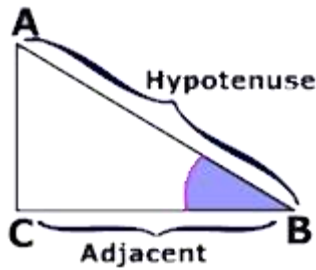
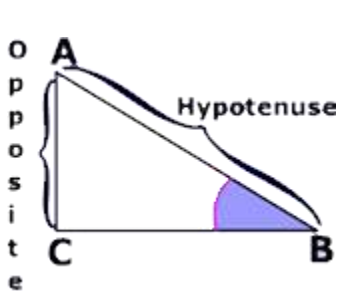
Online Graphing Calculator(free): www.meta-calculator.com/online/

Part I
Model Problems

$$\sin(B) = \frac{\textit{opposite}}{\textit{hypotenuse}}$$

$$\cos(B) = \frac{\textit{adjacent}}{\textit{hypotenuse}}$$

$$\tan(B) = \frac{\textit{opposite}}{\textit{adjacent}}$$

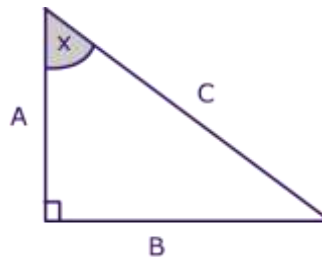


Model Problem 1) Identify The side adjacent, opposite to angle x and the hypotenuse

Adjacent to x : **A**

Opposite X : **B**

Hypotenuse : **C**



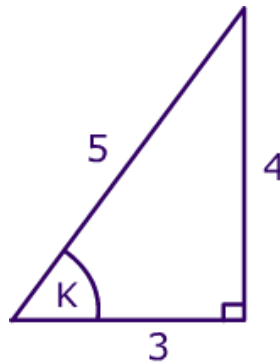
Model Problem 2) What is $\sin(k)$, $\cos(k)$ and $\tan(k)$?

Use SOHCAHTOA

$$\sin(k) = \frac{\textit{opposite}}{\textit{hypotenuse}} = \frac{4}{5} = .8$$

$$\cos(k) = \frac{\textit{adjacent}}{\textit{hypotenuse}} = \frac{3}{5} = .6$$

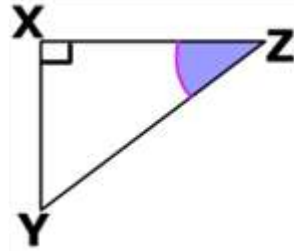
$$\tan(k) = \frac{\textit{opposite}}{\textit{adjacent}} = \frac{4}{3} = 1.33$$



II. Identifying Opposite, Adjacent and Hypotenuse

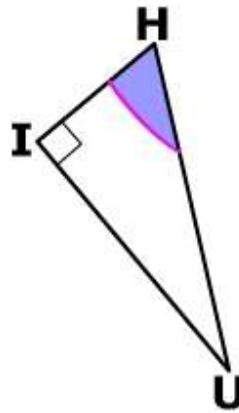
Identify

- 1) the hypotenuse
- 2) the side opposite of $\angle Z$: _____
- 3) the side adjacent to $\angle Z$: _____



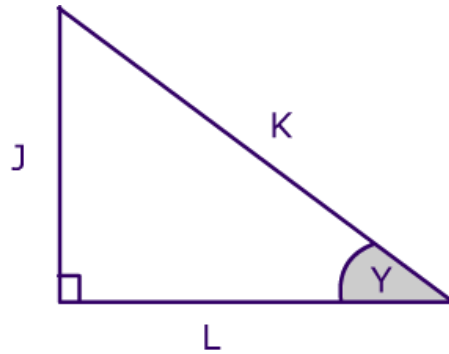
Identify

- 4) the hypotenuse
- 5) the side opposite of $\angle H$: _____
- 6) the side adjacent to $\angle H$: _____



Identify

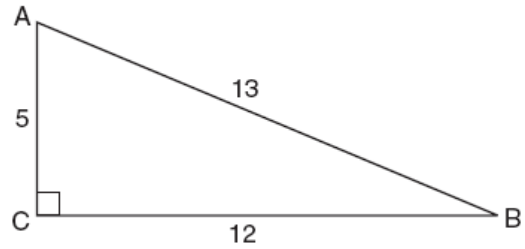
- 7) the hypotenuse
- 8) the side opposite of $\angle Y$: _____
- 9) the side adjacent to $\angle Y$: _____



Part III. Writing Sine, Cosine, Tangent Ratios

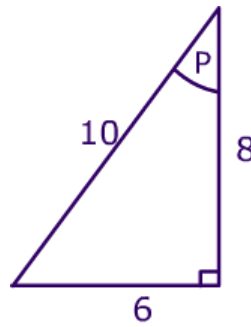
1) Which ratio represents $\cos A$ in the accompanying diagram of $\triangle ABC$?

- (1) $\frac{5}{13}$ (3) $\frac{12}{5}$
(2) $\frac{12}{13}$ (4) $\frac{13}{5}$



2) Which ratio represents $\sin P$ in the accompanying triangle?

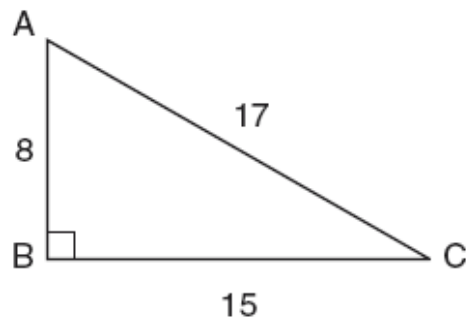
- (1) $\frac{6}{10}$ (3) $\frac{6}{8}$
(2) $\frac{8}{10}$ (4) $\frac{10}{6}$



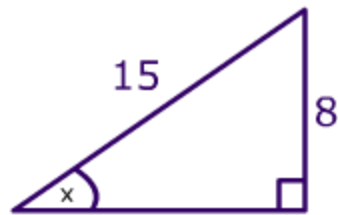
3) In the accompanying diagram of right triangle ABC , $AB = 8$, $BC = 15$, $AC = 17$, and $m\angle ABC = 90$.

What is $\tan \angle C$?

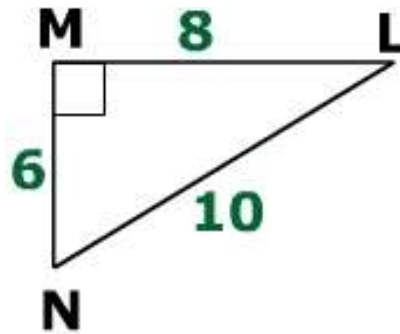
- (1) $\frac{8}{15}$ (3) $\frac{8}{17}$
(2) $\frac{17}{15}$ (4) $\frac{15}{17}$



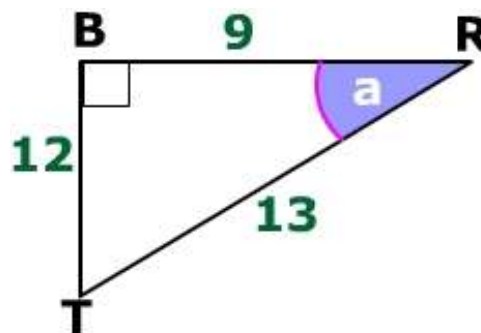
4) What is $\sin(x)$?



5) What is $\sin(L)$, $\cos(L)$ and $\tan(L)$?



6) What is $\sin(a)$, $\cos(a)$ and $\tan(a)$?



7) In triangle XYZ , $\angle y = 90^\circ$, $XY = 7$, $YZ = 24$, and $XZ = 25$, which ratio represents cosine of $\angle x$?

- (1) $\frac{7}{24}$ (3) $\frac{7}{25}$
(2) $\frac{24}{25}$ (4) $\frac{24}{7}$

8) In triangle MCT , the measure of $\angle T = 90^\circ$, $MC = 85$ cm, $CT = 84$ cm, and $TM = 13$ cm. Which ratio represents the sine of $\angle C$?

- (1) $\frac{13}{85}$ (3) $\frac{13}{84}$
(2) $\frac{84}{85}$ (4) $\frac{84}{13}$

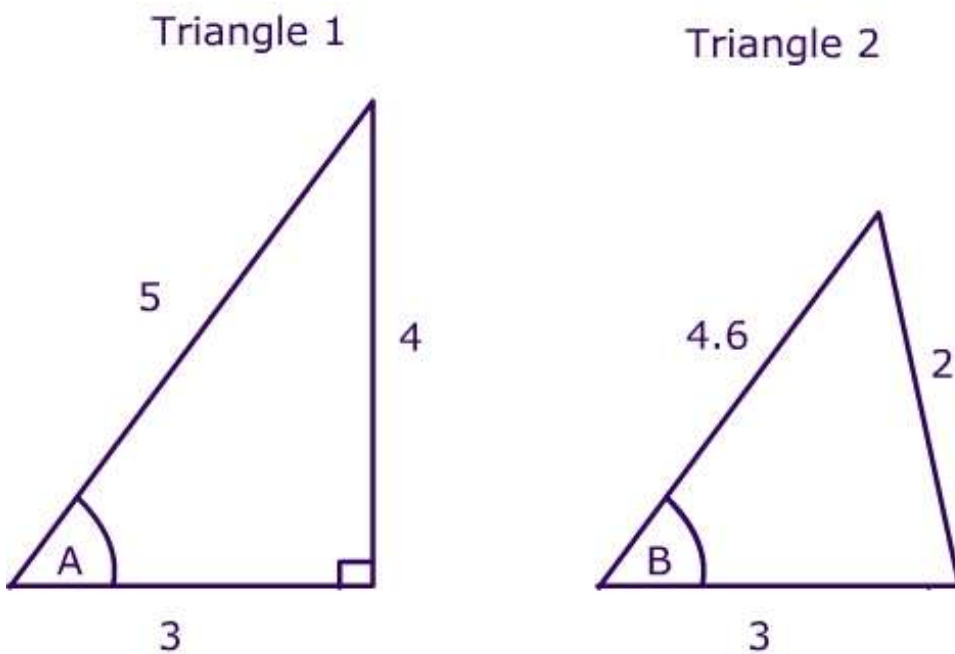
Error Analysis

A teacher asks the class if they can express the $\sin(A)$ in Triangle 1 and the $\sin(b)$ in triangle 2.

Jose says $\sin(A) = \frac{4}{5}$ and $\sin(b)$ does not exist.

Jenny says $\sin(A) = \frac{4}{5}$ and $\sin(B) = \frac{2}{4.6}$

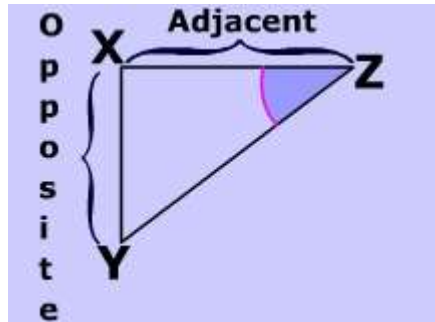
Who is correct? (explain your reasoning)



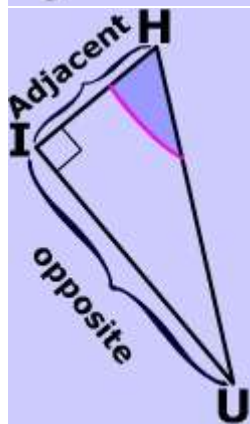
IV. Answer Key

Identifying Opposite, Adjacent and Hypotenuse

- 1) the hypotenuse **YZ**
- 2) the side opposite of $\angle Z$: **XY**
- 3) the side adjacent to $\angle Z$: **XZ**



- 4) the hypotenuse: **HU**
- 5) the side opposite of $\angle H$: **IU**
- 6) the side adjacent to $\angle H$: **HI**



Writing Sine, Cosine, Tangent Ratios

1) (1) $\frac{5}{13}$

2) (1) $\frac{6}{10}$

3) $\tan(c)$ (1) $\frac{8}{15}$

4) $\sin(x) = \frac{8}{15}$

5) $\sin(L) = \frac{6}{10}$

$\cos(L) = \frac{8}{10}$

$\tan(L) = \frac{6}{8}$

6) $\sin(a) = \frac{12}{13}$

$\cos(a) = \frac{9}{13}$

$\tan(a) = \frac{12}{9}$

7) (3) $\frac{7}{25}$

8) (3) $\frac{13}{84}$

Error Analysis

Jen is correct. Since **triangle 2** is **not** a right triangle, you can **not** apply sine, cosine, tangent to the triangle

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