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

Web Resources

SOHCAHTOA

You Tube 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

Part I
Model Problems

$$\sin(B) = \frac{opposite}{hypotenuse} \qquad \cos(B) = \frac{adjacent}{hypotenuse} \qquad \tan(B) = \frac{opposite}{adjacent}$$

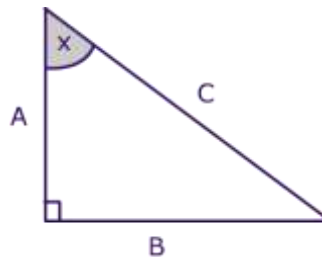**Model Problem 1)** **Identify** The side adjacent, opposite to angle **x** and the hypotenuse
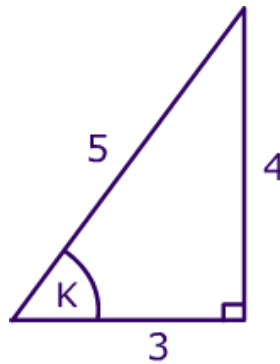
Adjacent to x : **A**

Opposite X : **B**

Hypotenuse : **C**

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

Use SOHCAHTOA

$$\sin(k) = \frac{opposite}{hypotenuse} = \frac{4}{5} = .8$$
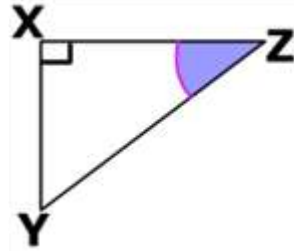
$$\cos(k) = \frac{adjacent}{hypotenuse} = \frac{3}{5} = .6$$

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

II. *Identifying Opposite, Adjacent and Hypotenuse*

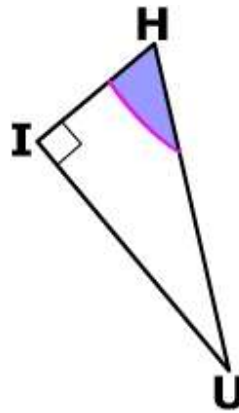**Identify**

1) the hypotenuse

2) the side opposite of ∠Z :_____

3) the side adjacent to ∠Z :_____

Identify
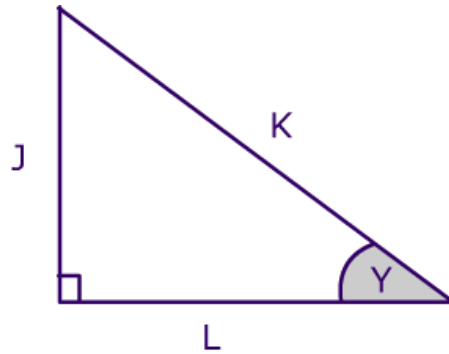
4) the hypotenuse

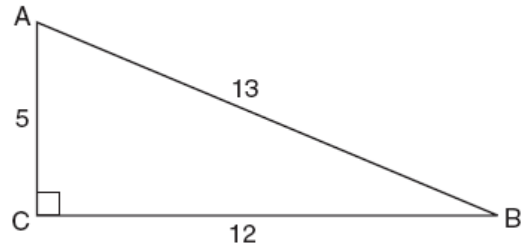5) the side opposite of ∠H :_____

6) the side adjacent to ∠H :_____

Identify

7) the hypotenuse

8) the side opposite of ∠Y :_____

9) the side adjacent to ∠Y :_____

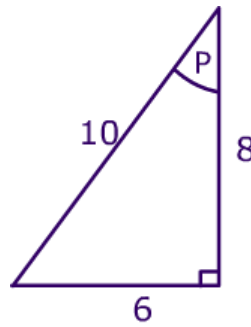**Part III.** *Writing Sine, Cosine, Tangent Ratios*

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

(1) $\dfrac{5}{13}$ (3) $\dfrac{12}{5}$

(2) $\dfrac{12}{13}$ (4) $\dfrac{13}{5}$

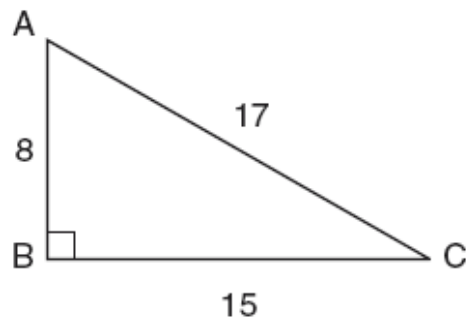**2)** Which ratio represents sin P in the accompanying triangle?

(1) $\dfrac{6}{10}$ (3) $\dfrac{6}{8}$

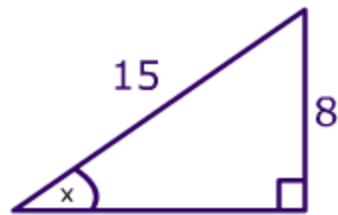(2) $\dfrac{8}{10}$ (4) $\dfrac{10}{6}$

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

What is tan $\angle C$?
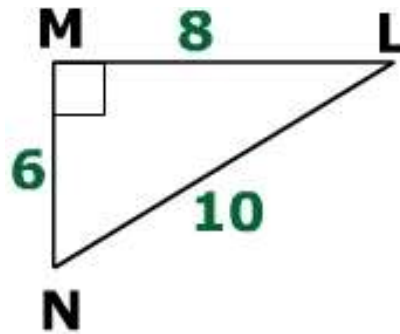
(1) $\dfrac{8}{15}$ (3) $\dfrac{8}{17}$

(2) $\dfrac{17}{15}$ (4) $\dfrac{15}{17}$

4) What is sin(x) ?

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

6) What is $\sin(a)$, $\cos(a)$ and $\tan(a)$?
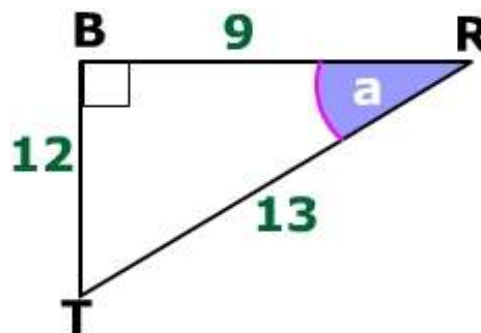
7) In triangle XYZ, $\angle y = 90°$ $XY = 7$, $YZ = 24$, and $XZ = 25$, which ratio represents cosine of $\angle x$?

(1) $\dfrac{7}{24}$ (3) $\dfrac{7}{25}$

(2) $\dfrac{24}{25}$ (4) $\dfrac{24}{7}$

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

(1) $\dfrac{13}{85}$ (3) $\dfrac{13}{84}$

(2) $\dfrac{84}{85}$ (4) $\dfrac{84}{13}$

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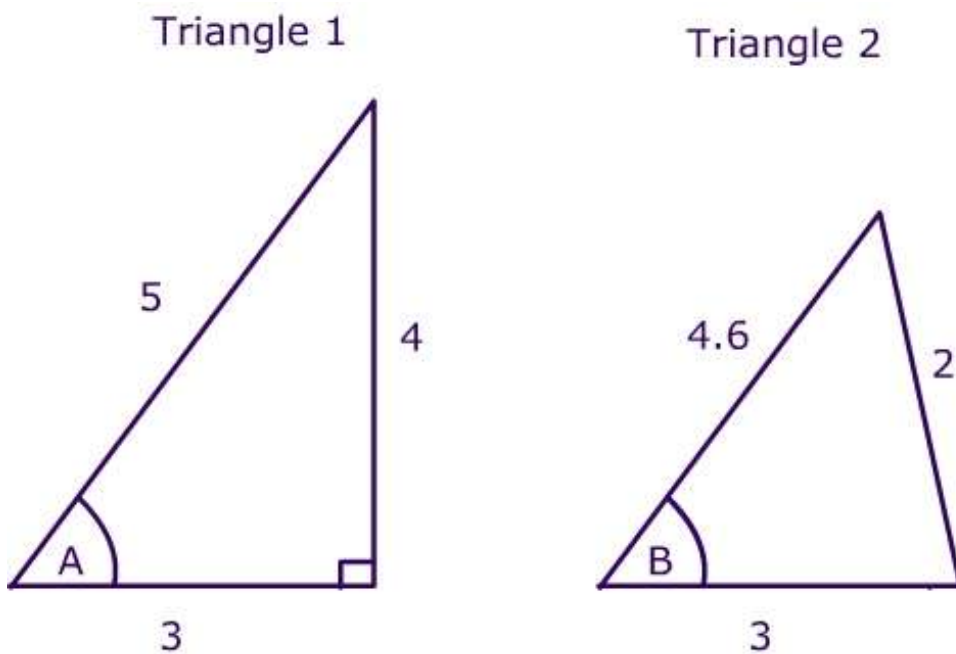
A teacher asks the class if they can express the sin(A) in Triangle 1 and the sin(b) in triangle 2.

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

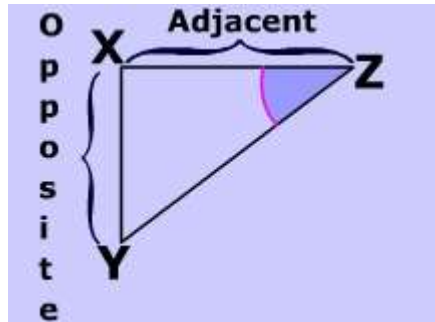Jenny says $\sin(A) = \dfrac{4}{5}$ and $\sin(B) = \dfrac{2}{4.6}$

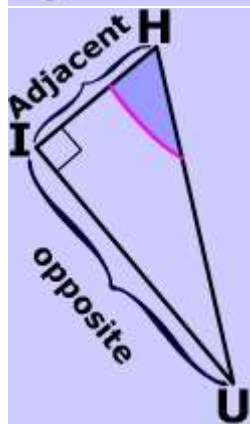**Who is correct?** (explain your reasoning)

Triangle 1

Triangle 2

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) $\dfrac{5}{13}$ 　　　　　　**2)** (1) $\dfrac{6}{10}$ 　　　　　**3)** tan(c) (1) $\dfrac{8}{15}$

4) sin(x) $\dfrac{8}{15}$

5) $\sin(L) = \dfrac{6}{10}$ 　　　　$\cos(L) = \dfrac{8}{10}$ 　　　　$\tan(L) = \dfrac{6}{8}$

6) $\sin(a) = \dfrac{12}{13}$ 　　　　$\cos(a) = \dfrac{9}{13}$ 　　　　$\tan(a) = \dfrac{12}{9}$

7) (3) $\dfrac{7}{25}$ 　　　　　　**8)** (3) $\dfrac{13}{84}$

Error Analysis
Jen is correct. Since **triangle 2** is **not** aright triangle, you can **not** apply sine , cosine , tangent to the triangle

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