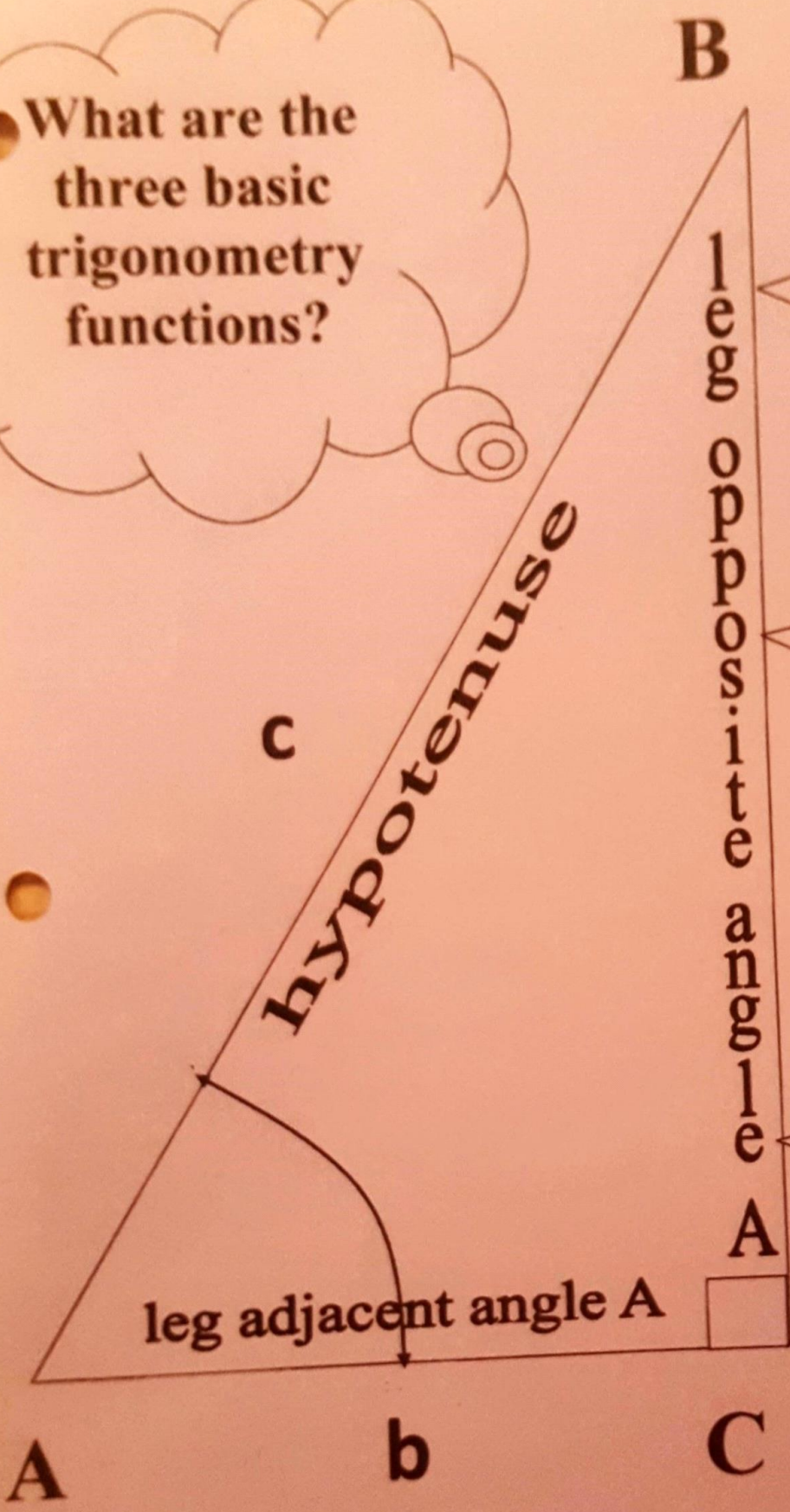


What are the three basic trigonometry functions?



$$\sin A = \frac{\text{opposite leg}}{\text{hypotenuse}}$$

$$\sin A = \frac{a}{c}$$

$$\sin B = \frac{b}{c}$$

$$\cos A = \frac{\text{adjacent leg}}{\text{hypotenuse}}$$

$$\cos A = \frac{b}{c}$$

$$\cos B = \frac{a}{c}$$

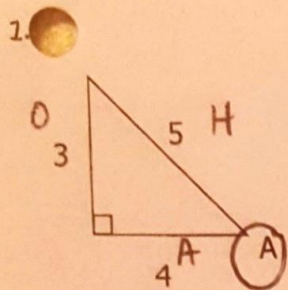
$$\tan A = \frac{\text{opposite leg}}{\text{adjacent leg}}$$

$$\tan A = \frac{a}{b}$$

$$\tan B = \frac{b}{a}$$

$$\tan A = \frac{\sin A}{\cos A}$$

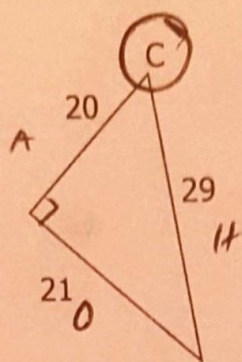
Use the definitions of the three trig ratios to complete each statement.



$$\sin A = \frac{3}{5}$$

$$\cos A = \frac{4}{5}$$

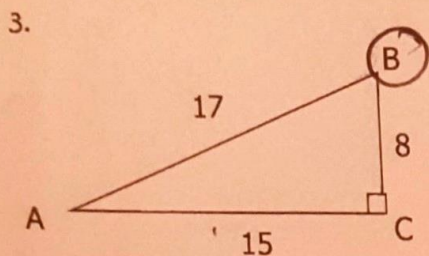
$$\tan A = \frac{3}{4}$$



$$\sin C = \frac{21}{29}$$

$$\cos C = \frac{20}{29}$$

$$\tan C = \frac{21}{20}$$



$$\sin B = \frac{15}{17}$$

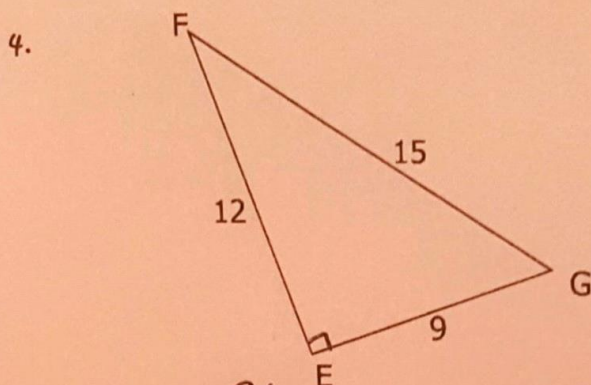
$$\cos B = \frac{8}{17}$$

$$\tan B = \frac{15}{8}$$

$$\sin A = \frac{8}{17}$$

$$\cos A = \frac{15}{17}$$

$$\tan A = \frac{8}{15}$$



$$\sin F = \frac{9}{15}$$

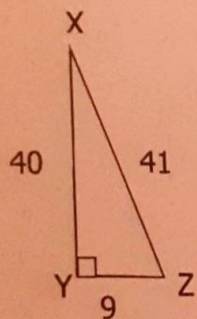
$$\cos F = \frac{12}{15}$$

$$\tan F = \frac{9}{12}$$

$$\sin G = \frac{12}{15}$$

$$\cos G = \frac{9}{15}$$

$$\tan G = \frac{12}{9}$$



$$\sin X = \frac{9}{41}$$

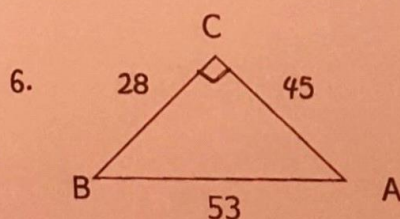
$$\cos X = \frac{40}{41}$$

$$\tan X = \frac{9}{40}$$

$$\sin Z = \frac{40}{41}$$

$$\cos Z = \frac{9}{41}$$

$$\tan Z = \frac{40}{9}$$



$$\sin B = \frac{45}{53}$$

$$\cos B = \frac{28}{53}$$

$$\tan B = \frac{45}{28}$$

$$\sin A = \frac{28}{53}$$

$$\cos A = \frac{45}{53}$$

$$\tan A = \frac{28}{45}$$

Day 5 – Trig Ratios: Given Info and Cofunctions

Sine and cosine are called **cofunctions** because the value of one ratio for one angle is the same as the value of the other ratio for the other angle. Since the two remaining angles of a right triangle add to 90° , you can use the sine of one acute angle to find the cosine of the other acute angle and vice versa.

Sine and Cosine Cofunction Identities

$$\sin \theta = \cos (90^\circ - \theta)$$

$$\cos \theta = \sin (90^\circ - \theta)$$

Practice: Determine a value of θ for which $\cos \theta = \sin$ $(90-\theta)$ is true or $\sin \theta = \cos$ $(90-\theta)$ is true.

a. $\cos 35^\circ = \sin$ $(90-35) = 55^\circ$ b. $\cos 27^\circ = \sin$ $(90-27) = 63^\circ$ c. $\cos 83^\circ = \sin$ $(90-83) = 7^\circ$

d. $\sin 67^\circ = \cos$ $(90-67) = 23^\circ$ e. $\sin 6^\circ = \cos$ $(90-6) = 84^\circ$ f. $\sin 42^\circ = \cos$ $(90-42) = 48^\circ$

g. $\sin x^\circ = \cos$ $(90-x)$ h. $\cos j^\circ = \sin$ $(90-j)$ i. $\sin \beta^\circ = \cos$ $(90-\beta)$

Answer the Following:

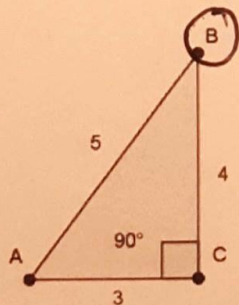
a. $\sin 40^\circ \approx 0.643$. What is $\cos 50^\circ$?

$$\approx 0.643$$

b. Find $\sin 28^\circ$ if $\cos 62^\circ = 0.469$.

$$\approx 0.469$$

c.

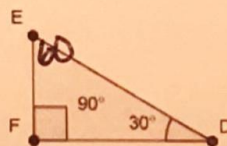


$$\begin{aligned} \text{sine } A &= 4/5 & \text{sine } B &= \underline{3/5} \\ \text{cosine } A &= 3/5 & \text{cosine } B &= \underline{4/5} \end{aligned}$$

$$\cos B = \sin A$$

$$\cos A = \sin B$$

d.



$$m\angle E = \underline{60^\circ}$$

$$\text{sine } D = 0.5000$$

$$\text{sine } E = \underline{0.8660}$$

$$\text{cosine } D = 0.8660$$

$$\text{cosine } E = \underline{0.5000}$$

$$\begin{aligned} \sin D &= \cos E \\ \cos D &= \sin E \end{aligned}$$

1) If $\tan \Theta = \frac{5}{12}$, then $\tan (90 - \Theta) = \frac{12}{5}$.

2) If $\sin \Theta = \frac{6}{10}$, then $\cos (90 - \Theta) = \frac{6}{10}$.

3) If $\cos \Theta = \frac{12}{14}$, then $\sin (90 - \Theta) = \frac{12}{14}$.

4) If $\tan \Theta = \frac{8}{7}$, then $\tan (90 - \Theta) = \frac{7}{8}$.

5) If $\sin \Theta = \frac{5}{12}$, then $\cos (90 - \Theta) = \frac{5}{12}$.

6) If $\cos \Theta = \frac{5}{9}$, then $\sin (90 - \Theta) = \frac{5}{9}$.

7) If $\tan \Theta = \frac{16}{25}$, then $\tan (90 - \Theta) = \frac{25}{16}$.

8) If $\sin \Theta = \frac{25}{27}$, then $\cos (90 - \Theta) = \frac{25}{27}$.

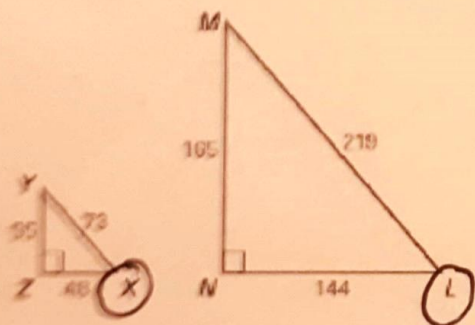
9) If $\cos \Theta = \frac{11}{14}$, then $\sin (90 - \Theta) = \frac{11}{14}$.

10) If $\tan \Theta = \frac{19}{7}$, then $\tan (90 - \Theta) = \frac{7}{19}$.

11) If $\sin \Theta = \frac{12}{5}$, then $\cos (90 - \Theta) = \frac{12}{5}$.

12) If $\cos \Theta = \frac{9}{2}$, then $\sin (90 - \Theta) = \frac{9}{2}$.

13)

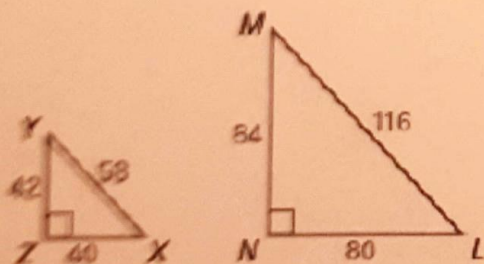


Give the appropriate ratio, then list all other similar trig ratios.

$\sin X = \frac{55}{73}$

$\cos Y$ $\sin L$ $\cos M$

14)



Give the appropriate ratio, then list all other similar trig ratios.

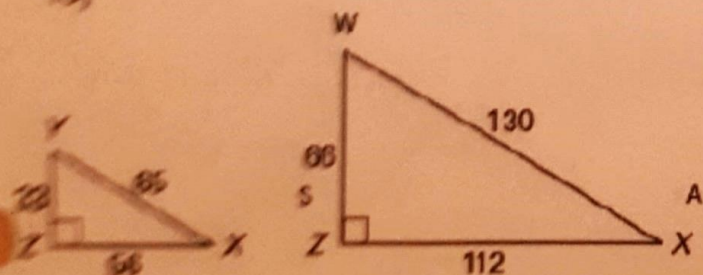
$\tan X = \frac{42}{40}$

$\tan M = \frac{80}{84}$

$\tan Y$

$\tan L$

15)



Give the appropriate ratio, then list all other similar trig ratios.

$\cos X = \frac{56}{68}$

$\sin Y$ $\sin A$ $\cos W$