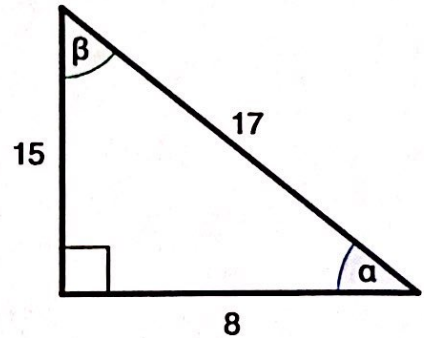


Name: Key Period: \_\_\_\_\_

## SETTING UP TRIG RATIOS PRACTICE

1. Use the right triangle below at right to find the trigonometric ratios.

|                                |                               |
|--------------------------------|-------------------------------|
| $\sin(\alpha) = \frac{15}{17}$ | $\sin(\beta) = \frac{8}{17}$  |
| $\cos(\alpha) = \frac{8}{17}$  | $\cos(\beta) = \frac{15}{17}$ |
| $\tan(\alpha) = \frac{15}{8}$  | $\tan(\beta) = \frac{8}{15}$  |



2. Use the right triangle below to find  $\tan(\theta)$ .

$\tan(\theta) = \frac{\text{opposite}}{\text{adjacent}}$   
 $= \frac{21}{20}$

$(21)^2 + b^2 = (29)^2$   
 $441 + b^2 = 841$   
 $-441$                        $-441$   
 $\hline \sqrt{b^2} = \sqrt{400}$   
 $b = 20$

3. Use the right triangle below to find  $\sin(\theta)$ .

$\sin(\theta) = \frac{\text{opposite}}{\text{hypotenuse}}$   
 $= \frac{5}{13}$

$(5)^2 + (12)^2 = c^2$   
 $25 + 144 = c^2$   
 $\sqrt{169} = \sqrt{c^2}$   
 $c = 13$

4. Use the right triangle below to find  $\cos(\alpha)$ .

$\cos(\alpha) = \frac{\text{adjacent}}{\text{hypotenuse}}$   
 $= \frac{7}{25}$

$(24)^2 + b^2 = (25)^2$   
 $576 + b^2 = 625$   
 $-576$                        $-576$   
 $\hline \sqrt{b^2} = \sqrt{49}$   
 $b = 7$

5. Use the right triangle below to find  $\tan(\alpha)$ .  
What does  $\alpha$  equal?

$\tan(\alpha) = \frac{\text{opposite}}{\text{adjacent}}$   
 $= \frac{4}{4}$   
 $= 1$

$(4)^2 + b^2 = (4\sqrt{2})^2$   
 $16 + b^2 = 16(2)$   
 $16 + b^2 = 32$   
 $-16$                        $-16$   
 $\hline \sqrt{b^2} = \sqrt{16}$   
 $b = 4$

\* Isosceles Right  $\Delta$   
 $45^\circ - 45^\circ - 90^\circ \Delta$   
 $\alpha = 45^\circ$   
 $\Rightarrow \tan(45^\circ) = 1$