

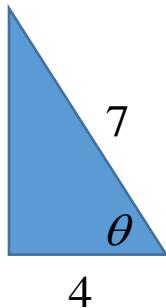
Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

**Final Practice**

1) Convert to radians,  $72^\circ$

2) Convert to degrees,  $\frac{\pi}{5}$

3) Find all six trig functions and angle  $\theta$



4) Find  $\sin \theta$  and  $\tan \theta$  by using a reference triangle when  $\cos \theta = -\frac{4}{5}$  and  $\cot \theta > 0$

5) Find the period and amplitude of each function.

a)  $f(x) = -4 \sin(\theta)$

b)  $f(x) = \frac{1}{4} \sin(3\theta)$

c)  $f(x) = 7 \cos\left(\frac{\theta}{2}\right)$

d)  $f(x) = .5 \tan(\theta)$

6) Construct a sinusoid that matches the given information

a) minimum:  $y = 4$  at  $x = 0$ ; maximum:  $y = 8$  at  $x = 6$

b) minimum:  $y = 5$  at  $x = 0$ ; maximum:  $y = 11$  at  $x = 5$

7) Simplify each expression:

$$\text{a) } \cos^3 x + \cos x \sin^2 x \quad \text{b) } \frac{2 \sin x \cos x}{\tan x} \quad \text{c) } \tan^2 x \cos x \sec x - \cos^2 x \tan^2 x$$

8) Use sum/difference formulas to evaluate:

$$\text{a) } \sin(75^\circ) \quad \text{b) } \cos \frac{\pi}{4} \cos \frac{\pi}{5} + \sin \frac{\pi}{4} \sin \frac{\pi}{5}$$

9) Solve  $\Delta ABC$  given that  $\angle A = 53^\circ$ ,  $\angle B = 55^\circ$ , and  $a = 10$ .

10) Solve  $\Delta ABC$  given that  $a = 10$ ,  $b = 4$ , and  $\angle C = 32^\circ$ .

11) Find the angle between the two vectors  $\mathbf{u} = \langle 2, 3 \rangle$  and  $\mathbf{v} = \langle 4, -1 \rangle$ .

12) Let  $\mathbf{u} = \langle 3, 2 \rangle$  and  $\mathbf{v} = \langle 5, -1 \rangle$ . Find the component form of  $-2\mathbf{u} + 3\mathbf{v}$ .

Find the magnitude and direction of the resultant vector.