Trig Graphing – WS 3 **Name** Key

Write an equation of the sine function given the following characteristics.

1. amplitude: 5 period: 360° phase shift: 60°

$A=5$ $b=1$ $C=60°$

$y = a\sin b(\theta - c)$

$y = 5\sin(\theta - 60°)$

2. amplitude: $\frac{2}{3}$ period: π phase shift: $\frac{\pi}{4}$

$A=$ $\frac{2\pi}{b} = \pi$ $C=$

$\pi b = 2\pi$

$b = 2$

$y = a\sin b(x - c)$

$y = \frac{2}{3}\sin 2\left(x - \frac{\pi}{4}\right)$

3. amplitude: 17 period: 45° phase shift: –60°

A $\frac{360}{b} = 45$ C

$45b = 360$

$b = 8$

$y = a\sin b(\theta - c)$

$y = 17\sin 8(\theta + 60°)$

4. amplitude: $\frac{1}{2}$ period: $\frac{3\pi}{2}$ phase shift: $-\frac{\pi}{4}$

$A=$ $\frac{2\pi}{b} = \frac{3\pi}{2}$ $C=$

$3\pi b = 4\pi$

$b = 4/3$

$y = a\sin b(x - c)$

$y = \frac{1}{2}\sin\frac{4}{3}\left(x + \frac{\pi}{4}\right)$

5. amplitude: 7 period: 225° phase shift: –90°

$A=$ $\frac{360}{b} = 225$

$225b = 360$

$b = 8/5$

$y = a\sin b(\theta - c)$

$y = 7\sin\frac{8}{5}(\theta + 90°)$

Write an equation of the cosine function given the following characteristics.

6. amplitude: $\frac{1}{3}$ period: 180° phase shift: 0

$A=$ $\frac{360}{b} = 180$ C

$180b = 360$

$b = 2$

$y = a\cos b(\theta - c)$

$y = \frac{1}{3}\cos 2\theta$

7. amplitude: 3 period: 180° phase shift: 120°

A $b = 2$ C

$y = a\cos b(\theta - c)$

$y = 3\cos 2(\theta - 120°)$

8. amplitude: 100 period: 630° phase shift: –90°

$A=$ $\frac{360}{b} = 630$ $C=$

$630b = 360$

$b = 4/7$

$y = a\cos b(\theta - c)$

$y = 100\cos\frac{4}{7}(\theta + 90°)$

9. amplitude: $\frac{7}{3}$ period: 150° phase shift: 270°

$A=$ $\frac{360}{b} = 150$ $C=$

$150b = 360$

$b = 12/5$

$y = a\cos b(\theta - c)$

$y = \frac{7}{3}\cos\frac{12}{5}(\theta - 270°)$

10. amplitude: 1 period: $\frac{3\pi}{4}$ phase shift: $-\frac{\pi}{3}$

A $\frac{2\pi}{b} = \frac{3\pi}{4}$ C

$3\pi b = 8\pi$

$b = 8/3$

$y = a\cos b(x - c)$

$y = \cos\frac{8}{3}\left(x + \frac{\pi}{3}\right)$