Sine and Cosine with Dilations Name _____

Determine the amplitude, period, domain and range of each function.

1. $y = \sin(4x)$

Amplitude = _____

Period = _____

Domain: _____

Range: _____

2. $y = 4\cos(5x)$

Amplitude = _____

Period=_____

Domain: _____

Range: _____

3. $y = -3\sin\theta$

Amplitude=_____

Period=_____

Domain: _____

Range: _____

4. $y = 4\cos\left(\frac{1}{2}\theta\right)$

Amplitude = _____

Period = _____

Domain: _____

Range: _____

5. $y = -2\sin\frac{x}{3}$

Amplitude = _____

Period=_____

Domain: _____

Range: _____

6. $y = 2\cos(-4\theta)$

Amplitude=_____

Period=_____

Domain: _____

Range: _____

7. $y = 3\sin\left(\frac{2}{3}x\right)$

Amplitude = _____

Period = _____

Domain: _____

Range: _____

8. $y = \frac{2}{3}\cos\frac{x}{5}$

Amplitude = _____

Period=_____

Domain: _____

Range: _____

9. $y = -3\sin(-6\theta)$

Amplitude=_____

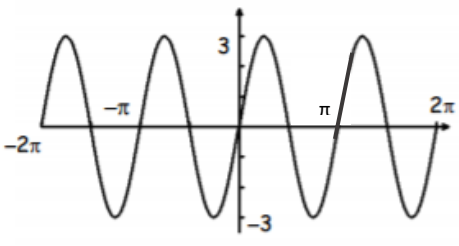
Period=_____

Domain: _____

Range: _____

Give the amplitude and period of each function graphed below. Then write an equation of each graph.

10.

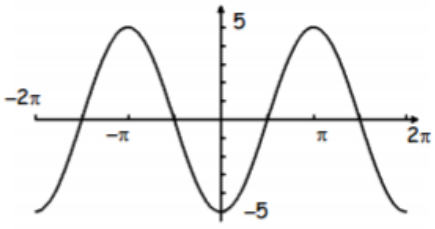


Amplitude = _____

Period = _____

Equation: _____

11.



Amplitude = _____

Period = _____

Equation: _____

Rewrite the following sine and cosine functions so that the argument is not negative.

12. $y = 3\sin(-2x)$

13. $y = -2\cos(-4\theta)$

14. $y = -\frac{1}{2}\sin\left(-\frac{x}{2}\right)$

15. $y = 3\cos(-2x)$

16. $y = -2\sin(-4\theta)$

17. $y = \cos\left(-\frac{2}{3}\theta\right)$

State the amplitude and period for each of the following functions. Then graph one complete period of each, remembering to label the tick divisions and both your horizontal axis and vertical axis. Also state the domain and range of one period using interval notation.
*** Remember: ***Θ → degrees*** and **x → *radians***.

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

19. $y = -4\cos\left(\frac{\pi x}{5}\right)$

20. $y = \frac{3}{2}\sin\left(\frac{2\theta}{3}\right)$