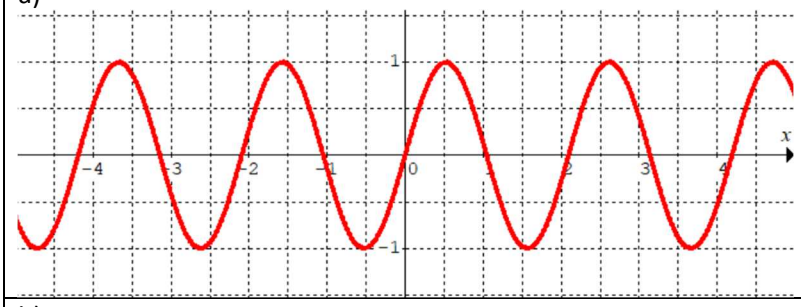
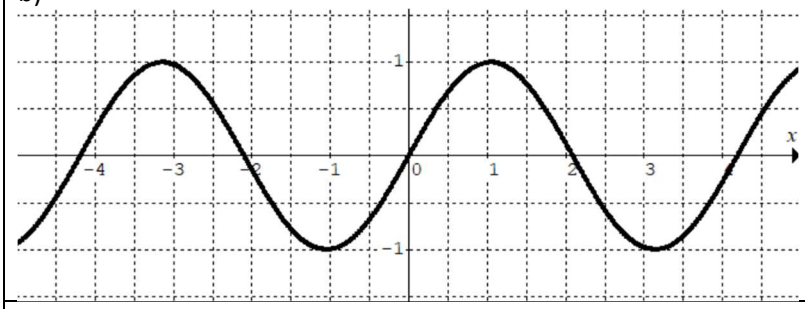
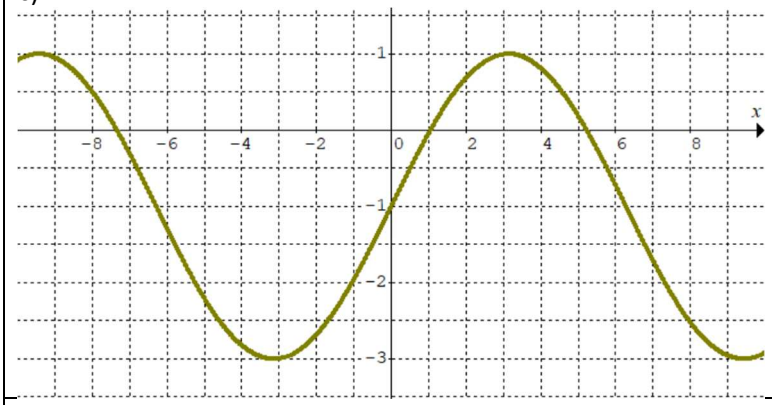
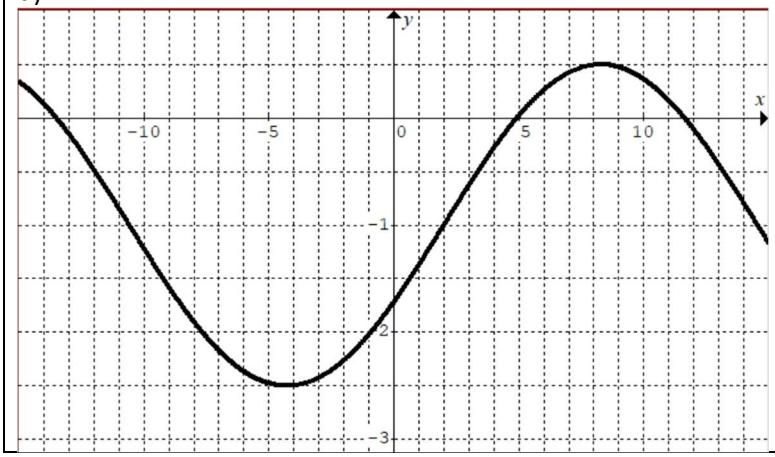
Name:_____ Date:_____

M12P HW Section 5.1 Graphing Sine and Cosine Function

1. Given the wave functions below, indicate the period, amplitude, general formula for all the x-intercepts, Y-intercept, domain and range

a) 	PERIOD: Amplitude: General Formula X-intercepts: Y intercept: Domain: Range:
b) 	PERIOD: Amplitude: General Formula X-intercepts: Y intercept: Domain: Range:
c) 	PERIOD: Amplitude: General Formula X-intercepts: Y intercept: Domain: Range:
d) 	PERIOD: Amplitude: General Formula X-intercepts: Y intercept: Domain: Range:

2. When looking at an unit circle, at what angles are the "X" coordinates equal to zero? At what angles are the "Y" coordinates equal to zero?

3. What does the sine function represent in an unit circle? When are graphing the sine function, what are actually graphing? Explain:

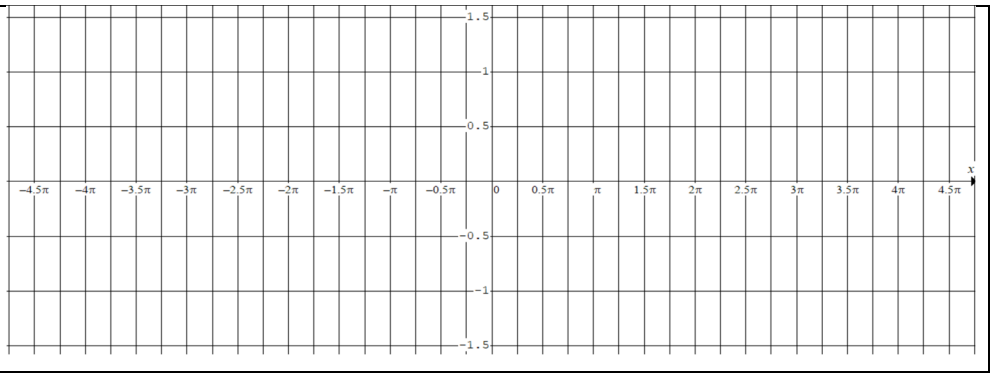
4. What does the cosine function represent in an unit circle? When are graphing the cosine function, what are actually graphing? Explain:

5. Why is the period of a Sine function and Cosine function both equal to 2π? Explain

6. Why is the amplitude of the a Sine Function and Cosine function both equal to 1? Explain:

7. Graph the following trigonometric functions with the graphs provided.

8. Graph the following functions on the grid provided. Indicate the period, amplitude, "x" intercepts, "y" intercepts, domain, and range

$y = \sin\theta$ Period: Amplitude X-intercepts Y- Intercepts Domain : Range :	

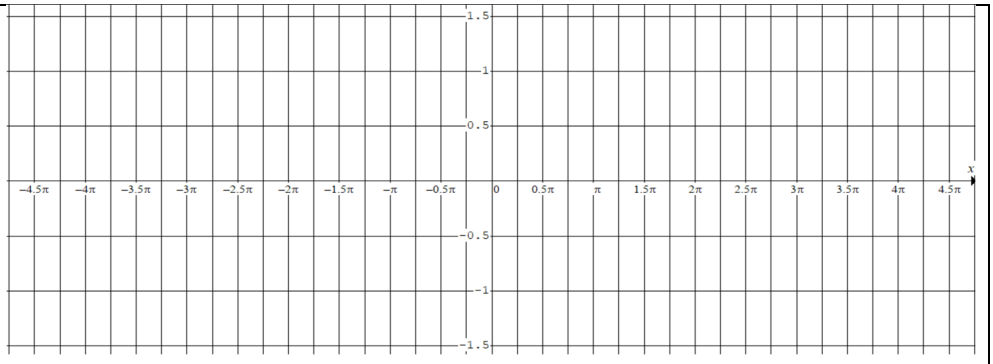
$y = \cos\theta$

Period: Amplitude

X-intercepts

Y- Intercepts

Domain : Range :



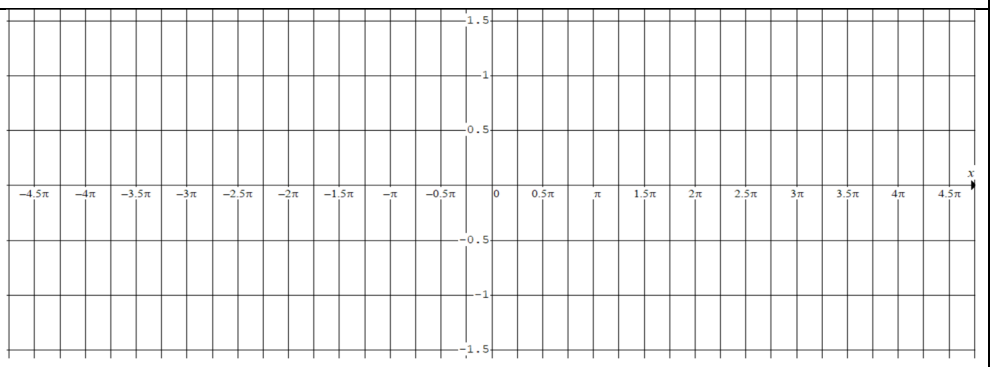
$y = -\sin\theta$

Period: Amplitude

X-intercepts

Y- Intercepts

Domain : Range :



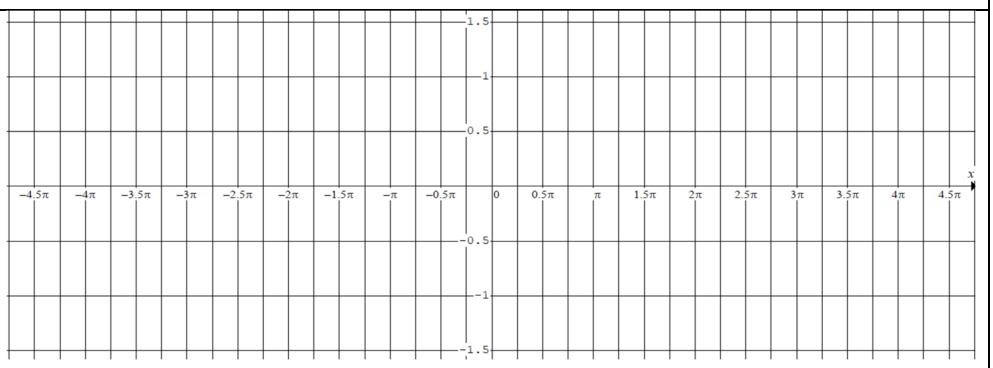
$y = -\cos\theta$

Period: Amplitude

X-intercepts

Y- Intercepts

Domain : Range :



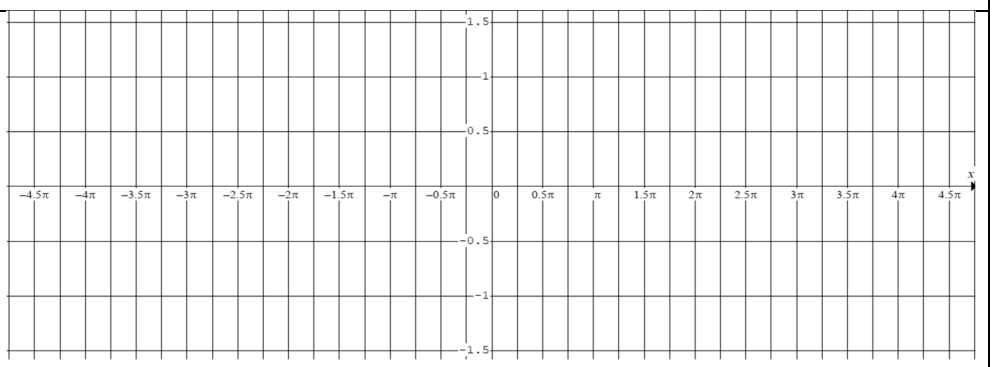
$y = \sin(0.5\theta)$ [Period = 4π]

Amplitude

X-intercepts

Y- Intercepts

Domain : Range :



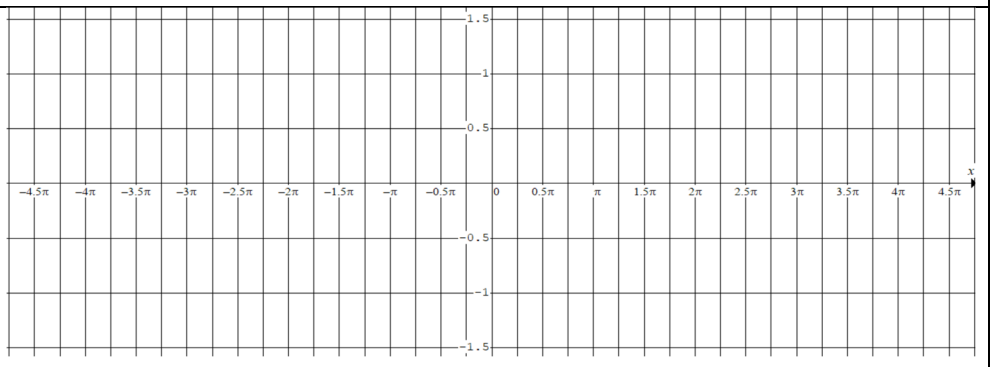
$y = \cos(0.5\theta)$ [Period = 4π]

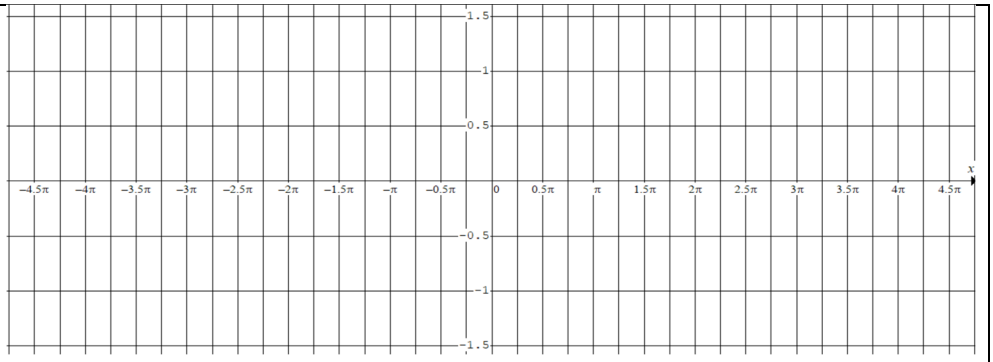
Amplitude

X-intercepts

Y- Intercepts

Domain : Range :



$y = \sin(0.25\theta)$ [Period = 8π] Amplitude X-intercepts Y- Intercepts Domain : Range :	

9. When the graph of $y = \sin x$ and $y = \cos x$ are drawn on the same graph for $0 < x < 2\pi$ in which quadrants do they intersect? What are the coordinates of the points of intersection?

10. Given that $\sin\theta > 0$ and $\cos\theta < 0$, what is the range of possible values of θ if $0 < \theta < 2\pi$?

11. Indicate TRUE or FALSE: $\sin\theta > 0$ and $\cos\theta > 0$, then $\tan\theta$ can be either positive or negative.

12. How many units should the graph of $y = \sin x$ be shifted horizontally so that it will overlap the graph of $y = \cos x$?

13. When the graph of $y = \sin x$ and $y = 0.5$ are drawn on the same graph for $0 < x < 2\pi$ in which quadrants do they intersect? What are the coordinates of the points of intersection?

14. What is the amplitude and period of the graph $y = A\sin(Bx)$ if $A = -3$ and $B = 2$?

15. If point "P" is on the unit circle with coordinates defined by $(\sin\theta, \cos\theta)$, what is θ in standard position?

16. If $0° \le \theta \le 180°$ and $\sin\theta \ge \cos\theta$, then:

a) $0 \le \theta \le 45°$ b) $45° \le \theta \le 90°$ c) $45° \le \theta \le 180°$ d) $90° \le \theta \le 180°$ e) $0 \le \theta \le 90°$

17. In ΔABC, $2\cos B \cos A = \sin C$. What kind of shape is the triangle?

a) Right triangle b) Equilateral triangle c) 45-45-90 triangle d) Isosceles triangle

18. $0 < \beta < 2\pi$ what does β need to be in order for $\sin\beta > \cos\beta$ to be true?

A. $\frac{\pi}{4} < \beta < \frac{\pi}{2}$ and $\pi < \beta < \frac{5}{4}\pi$ B. $\frac{\pi}{4} < \beta < \pi$

C. $\frac{\pi}{4} < \beta < \frac{5}{4}\pi$ D. $\frac{\pi}{4} < \beta < \pi$ *and* $\frac{5}{4}\pi < \beta < \frac{3}{2}\pi$

19. A rectangle PQRS has side PQ on the x-axis and touches the graph of $y = k\cos(x)$ at the point "S" and "R" as shown. If the length of PQ is $\frac{\pi}{3}$ and the area of the rectangle is $\frac{5\pi}{3}$, what is the value of "k"?