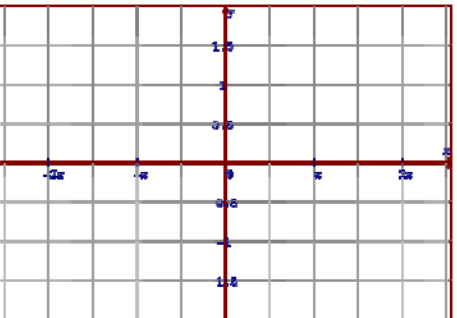
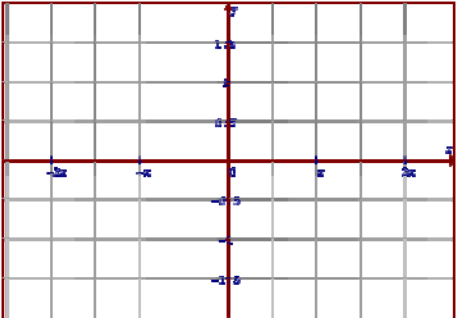
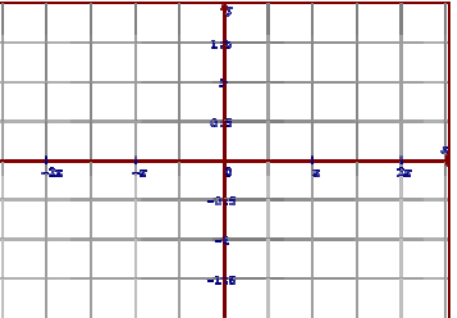
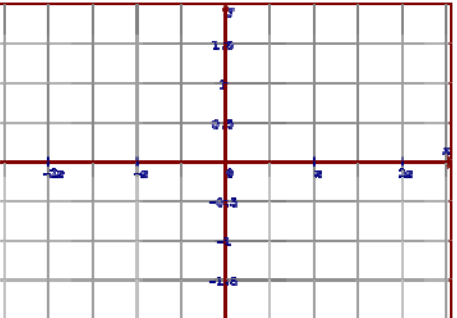
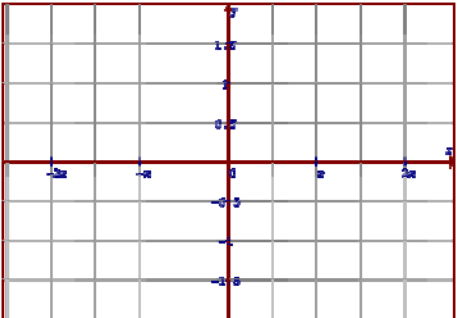
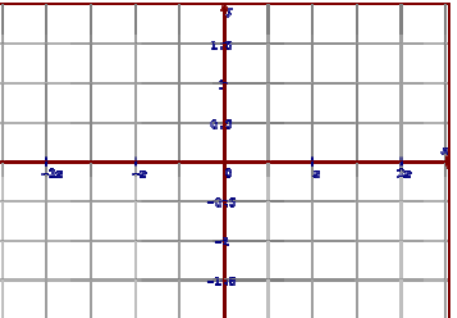


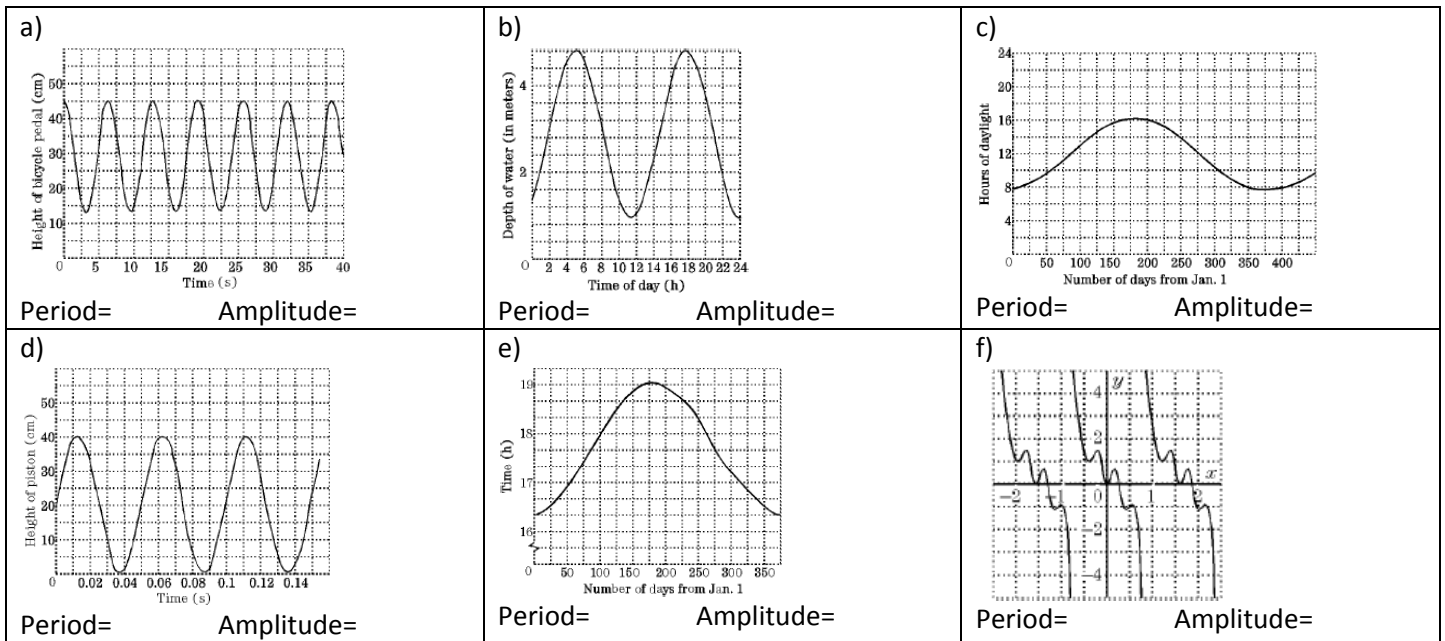
Section 3.3 Graphing Sine Cosine and Tangent Functions

1. Graph the following function for $-2\pi \leq \theta \leq 2\pi$. Indicate the Period, Amplitude, Domain, and Range:

<p>i) $y = \sin x$</p>  <p>Period: Amplitude: Domain: Range:</p>	<p>ii) $y = \cos x$</p>  <p>Period: Amplitude: Domain: Range:</p>	<p>iii) $y = \tan x$</p>  <p>Period: Amplitude: Domain: Range:</p>
<p>iv) $y = -\sin x$</p>  <p>Period: Amplitude: Domain: Range:</p>	<p>v) $y = -\cos x - 0.5$</p>  <p>Period: Amplitude: Domain: Range:</p>	<p>vi) $y = -\tan x + 0.5$</p>  <p>Period: Amplitude: Domain: Range:</p>

2. Indicate the general formula for the vertical asymptotes of $y = \tan x$
3. 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?
4. Given that $\sin \theta > 0$ and $\cos \theta < 0$, what is the range of possible values of θ if $0 < \theta < 2\pi$?
5. Indicate TRUE or FALSE: $\sin \theta > 0$ and $\cos \theta > 0$, then $\tan \theta$ can be either positive or negative.

6. Given each of the following trigonometric graphs, indicate the amplitude and period



7. How do the intersections of $y = \sin x$ and $y = \cos x$ relate with the graph of $y = \tan x$?

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

9. 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?

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

11. Given that the terminal arm intersects the unit circle at coordinates (a, b) , what is the reference angle and the angle in standard position?

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

13. Given the identity $\sin 2a = 2 \sin a \times \cos a$, what is the value of $\sin 2d$ if $\cos d = \frac{3}{4}$ and "d" is in quadrant 1?

Find the exact value.

14. If $\cos \theta = \frac{a^2 - b^2}{a^2 + b^2}$ and $0^\circ \leq \theta \leq 90^\circ$, find the value of $\sin \theta$:

a) $\frac{2ab}{a^2 + b^2}$

b) $\frac{4ab}{a^2 + b^2}$

c) $\frac{2a^2b^2}{a^2 + b^2}$

d) $\frac{4a^2b^2}{a^2 + b^2}$

e) $\frac{a^2b^2}{2a^2 + 2b^2}$

15. If $0^\circ \leq \theta \leq 180^\circ$ and $\sin \theta \geq \cos \theta$, then:

a) $0 \leq \theta \leq 45^\circ$

b) $45^\circ \leq \theta \leq 90^\circ$

c) $45^\circ \leq \theta \leq 180^\circ$

d) $90^\circ \leq \theta \leq 180^\circ$

e) $0 \leq \theta \leq 90^\circ$

16. $\cos(270^\circ - \theta) =$

a) $-\cos \theta$

b) $\cos \theta$

c) $-\sin \theta$

d) $\sin \theta$

e) $\sin \theta \cos \theta$

17. If $\sin 2a < 0$, $\cos a - \sin a < 0$, which quadrant is angle a in?

a) I

b) II

c) III

d) IV

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

a) Right triangle

b) Equilateral triangle

c) 45-45-90 triangle

d) Isosceles triangle

19. $0 < \beta < 2\pi$ 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 $\frac{5}{4}\pi < \beta < \frac{3}{2}\pi$

20. Angle A, B are both acute angles. Point P has coordinates $(\cos B - \sin A, \sin B - \cos A)$ Which quadrant is point P in?

a) I

b) II

c) III

d) IV

21. $\sin \alpha > \sin \beta$ Which of the following is true?

a) If α, β are in the quadrant I, then $\cos \alpha > \cos \beta$

b) If α, β are in the quadrant II, then $\tan \alpha > \tan \beta$

c) If α, β are in the quadrant III, then $\cos \alpha > \cos \beta$

d) If α, β are in the quadrant IV, then $\tan \alpha > \tan \beta$

22. 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"?

