Name: _____

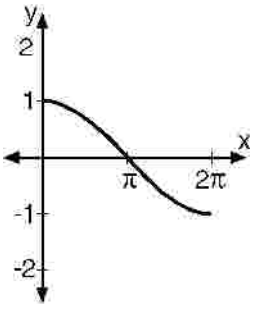
Math 442 Home work graph of sine and cosine

1) What is the range of the function $y = 2 \cos 3x$?

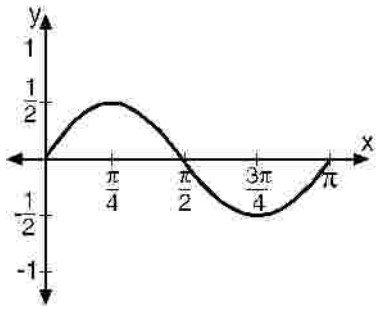
2) If $f(x) = 4 \sin \frac{x}{3}$, find f(p).

3) In a circle, a central angle of 3.5 radians intercepts an arc of 24.5 centimeters. Find the number of centimeters in the radius of the circle.

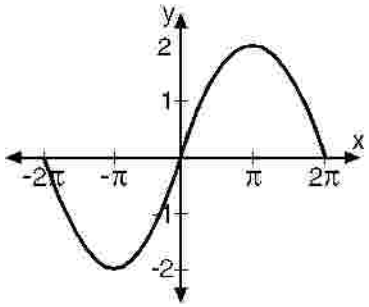
4) What equation is represented by the graph below?



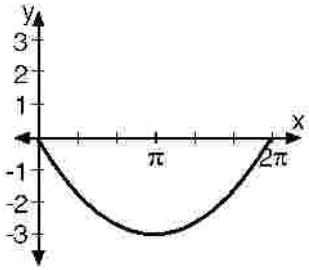
5) What equation is represented by the graph below?



6) What equation is represented by the graph below?



7) What equation is represented by the graph below?



8) Write the equation for the cosine curve whose period is 4p and whose amplitude is $\frac{1}{2}$.

9) Write an equation for the sine curve whose period is 60D and whose amplitude is 2.

10) Find all values of x in the interval $0 < x < p$ that make the following fraction undefined: $\frac{1}{\sin 2x}$

11) (a) On the same set of axes, sketch and label the graphs of the equations $y = \sin \frac{1}{2}x$ and $y = 2 \cos x$ in the interval $0 < x < 2p$.

(b) Use the graphs sketched in *part (a)* to determine the number of points in the interval $0 < x < 2p$ that satisfy the equation $\sin \frac{1}{2}x = 2 \cos x$.

12) (a) On the same set of axes, sketch and label the graphs of the equations $y = 2 \cos \frac{1}{2}x$ and $y = \sin 2x$ for all values of x in the interval $0 < x < 2p$.

(b) Using the graphs drawn in *part (a)*, determine a value of x for which $2 \cos \frac{1}{2}x = \sin 2x$.

1) $-2 < y < 2$

2) $2\sqrt{3}$

3) 7

4) $y = \cos \frac{1}{2}x$

5) $y = \frac{1}{2} \sin 2x$

6) $y = 2 \sin \frac{1}{2}x$

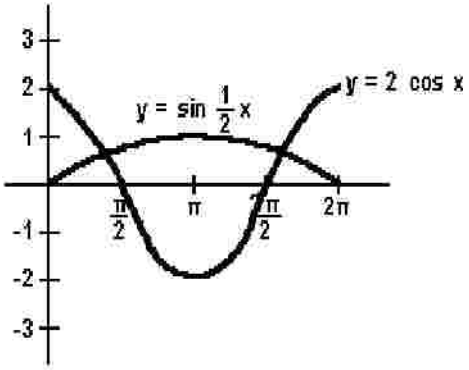
7) $y = -3 \sin \frac{1}{2}x$

8) $y = \frac{1}{2} \cos \frac{1}{2}x$

9) $y = 2 \sin 6x$

10) $0, \frac{\pi}{2}$, p

11) (a)



(b) 2

12) (a) Answer is a graph.
(b) p