Questions on HW

We'll go over as many as you need.

2nd Ch. 7 HW Packet

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Turn in Thursday

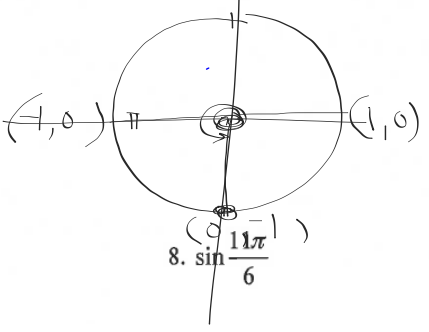
Exact Trig Values

Without a calculator, evaluate each trig function at the given angle (*I recommend you make a separate drawing for each*)

1. $\cos\frac{7\pi}{6}$

2. $\sin\frac{3\pi}{2}$

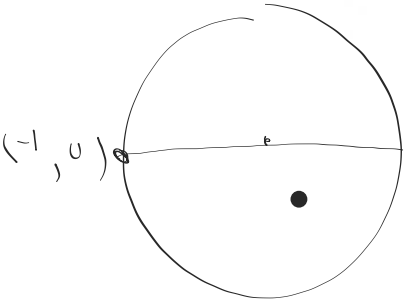
3. $\tan\frac{3\pi}{4}$



4. $\cos\frac{-2\pi}{3}$

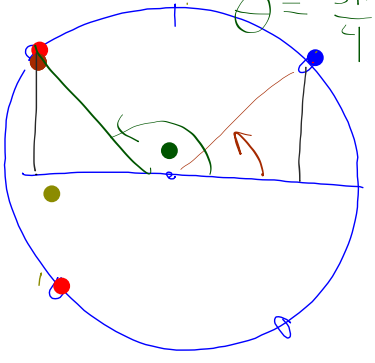
8. $\sin\frac{11\pi}{6}$

9. $\tan(-\pi)$

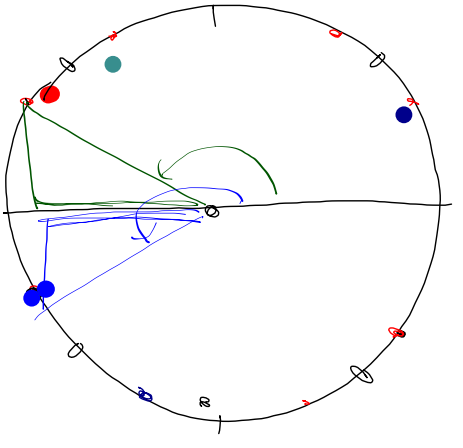


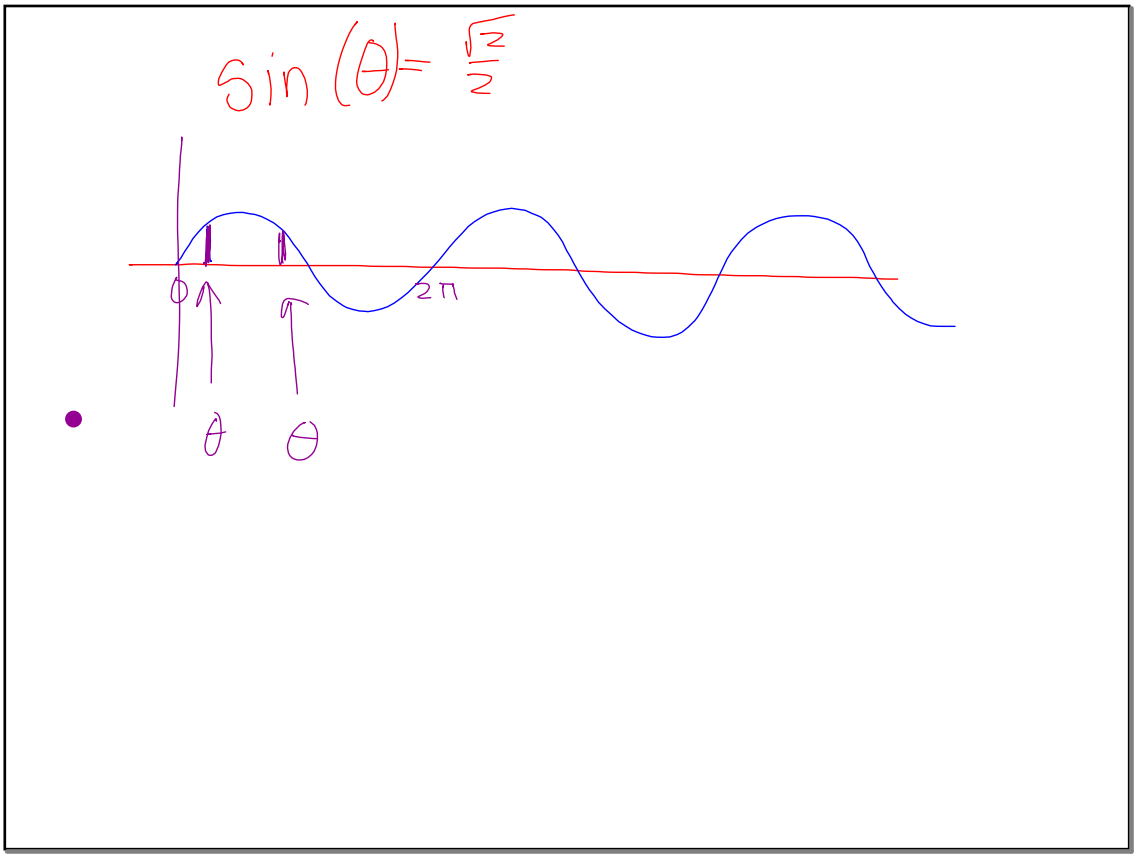
10. Without a calculator, solve for each angle(s) that makes the given equation true on the interval $[0, 2\pi]$.

$\sin\theta = \frac{\sqrt{2}}{2}$

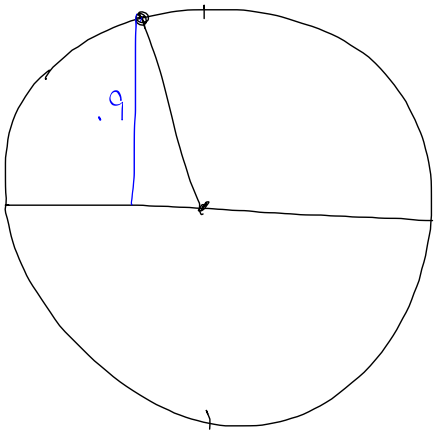


$\cos\theta = -\frac{\sqrt{3}}{2}$



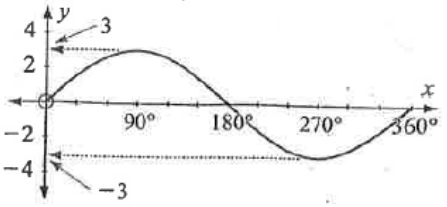


11. Draw a Unit Circle. Draw an rotation angele of around 100 degrees. Draw a line sement that represents the length of the the approximate value of $sin(100°)$. Eyeballing this segment, estimate the approximate value of $sin(100°)$ to the nearest 0.1

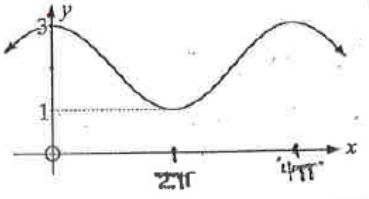


12. Determine the equatic
your calculat

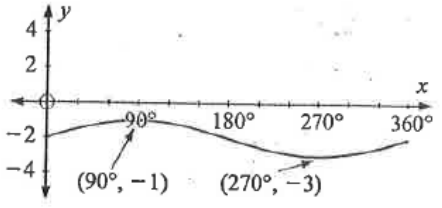
a)



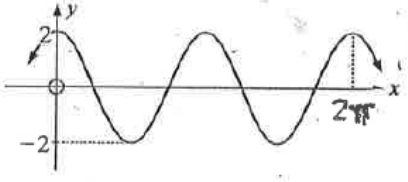
b)

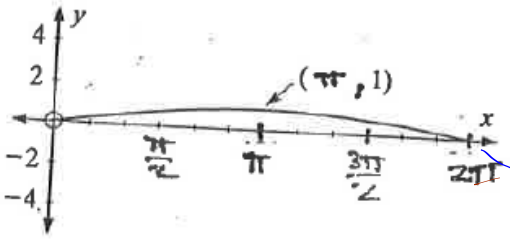


c)



d)





4π

Per = 4π

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

b =

No calculator Sketching Practice

Sketch and label the following graphs

$f(\theta) = 8\sin(2\theta)$ sketch 1 cycle, in degrees

$f(x) = 15\cos\left(\frac{x}{2}\right)$ sketch 1 cycle, in radians

$H(t) = 1000\sin(5t) + 4000$ sketch 1 cycle

$f(\theta) = 8\sin(2\theta) +$

$f(\theta) = 15\cos\left(\frac{x}{2}\right)$ $15\cos\left(\frac{1}{2}x\right)$

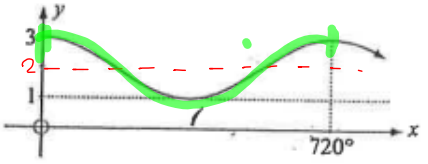
$f(\theta) = 1000 \sin(5t)$

Graph to Equation

In your notes, write the equation for the following graphs.

$y = a \sin b(x-h) + k$

A

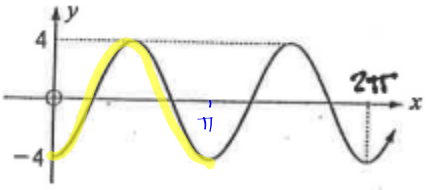


A =
Per = 720° b= $\frac{1}{2}$
h =
k= 2

$y = \cos\left(\frac{1}{2}x\right) + 2$

$\cos\left(\frac{x}{2}\right) + 2$

B

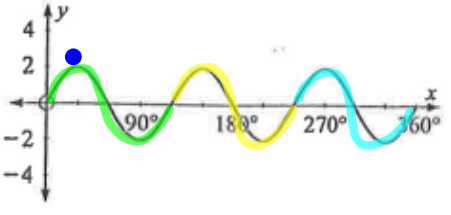


Per = π

so $b = \frac{2\pi}{Per} = \frac{2\pi}{\pi} = 2$

$y = -4\cos(2x)$

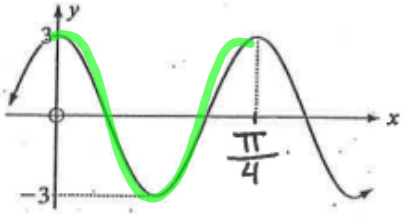
C



$y = 2\sin(3x)$

A =
Per = 120° b= $\frac{360°}{120°} = 3$
h =
k=

D



Per = $\frac{\pi}{4}$

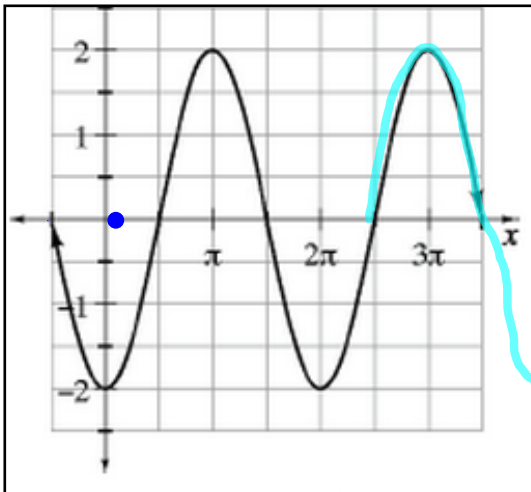
so $b = \frac{2\pi}{Per} = \frac{2\pi}{\frac{\pi}{4}} \quad \frac{\frac{2\pi}{1}}{\frac{\pi}{4}} = \frac{2\pi}{1} \cdot \frac{4}{\pi} = 8$

$y = 3\cos(8x)$

Last New Items of Ch.7

Aim: Which is better, sine or cosine?

7-155



$y = -2\cos(x)$

$y = 2\cos(x-\pi)$

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

$y = -2\sin(x+\frac{\pi}{2})$

$y = 2\sin(x-\frac{5\pi}{2})$

The Buffalo Problem

Use your sketching abilities

Use your analytic thinking abilities

Work in a cooperative spirit

No calculators allowed.

Need $y = a \sin[b(\theta - h)] + k$

$P = \frac{2\pi}{b}$

The population of water buffalo is given by the function

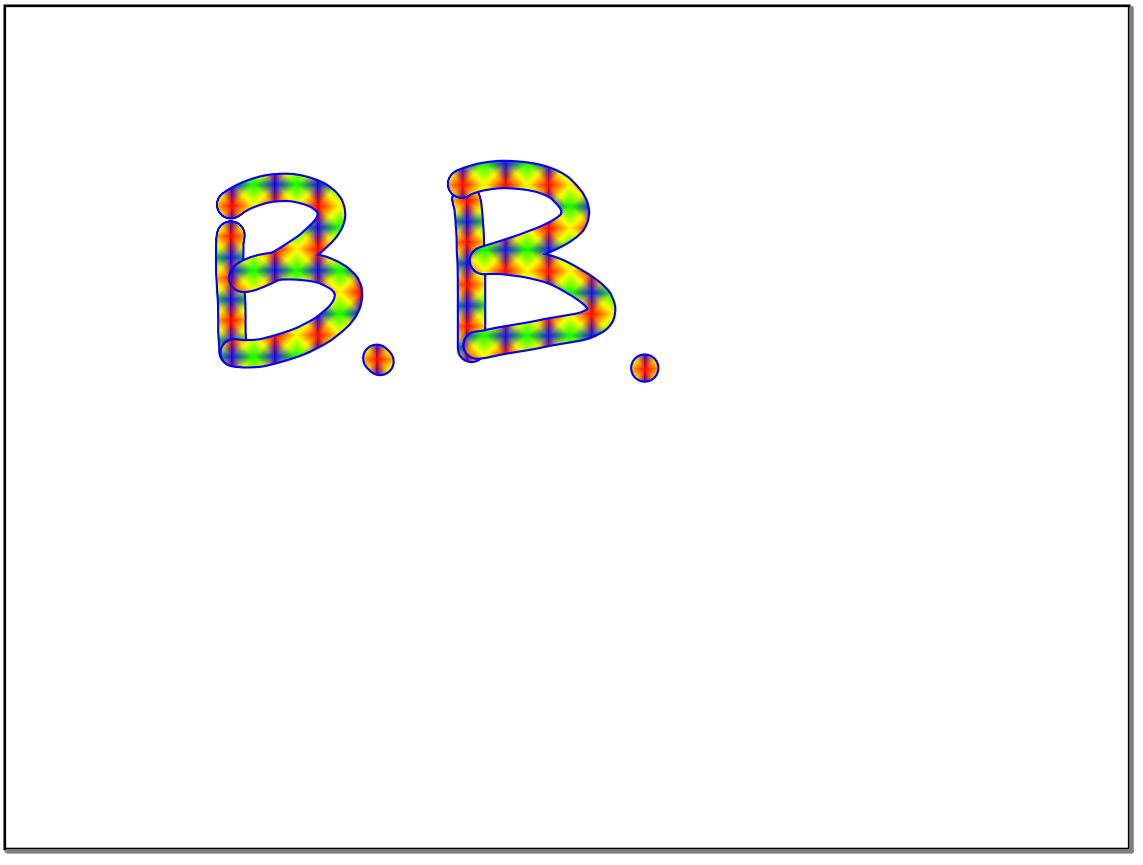
$$P(t) = 400 + 250 \sin(90\,t)$$

*where **t** = number of years since the first population estimate was made*

a) What was the initial estimate of the buffalo population ?

b) What was the size after
- **1 year ?**
- **two years ?**

c) Find the smallest population and when it first occurs.


B.B.

Practice

Periodic Graphs $\Longrightarrow$ Their Functions

your best friend : $\text{Per} = \frac{2\pi}{b}$

if in radians

A **Without using a calculator, identify the following for each of the two cyclic functions. Then sketch the graph.**

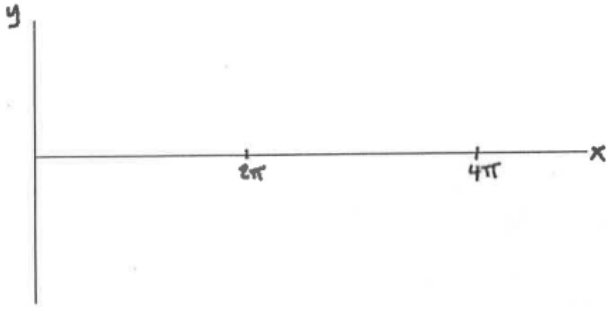
$y = 2\sin(x) + 1$

Amplitude =

Period =

Horizontal shift constant, h=

the vertical shift constant, k=



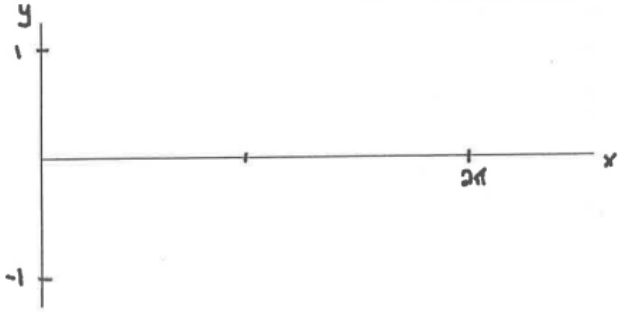
$y = \frac{1}{2}\cos(2x)$

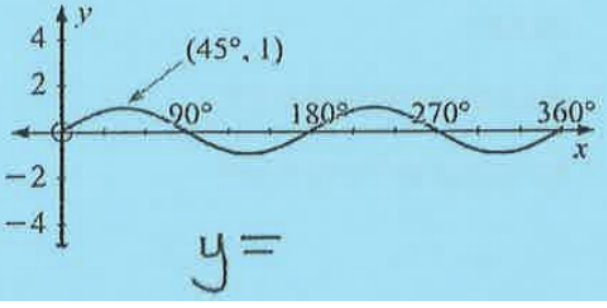
Amplitude =

Period =

Horizontal shift constant, h=

the vertical shift constant, k=





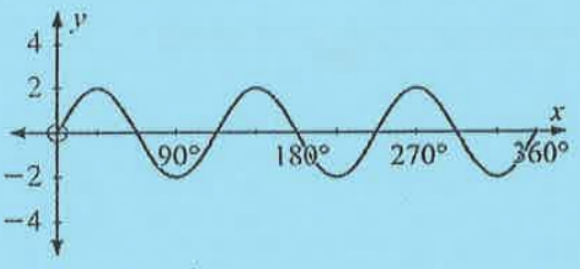
$y =$

Amplitude =

Period = , so b =

Horizontal shift constant, h=

the vertical shift constant, k=



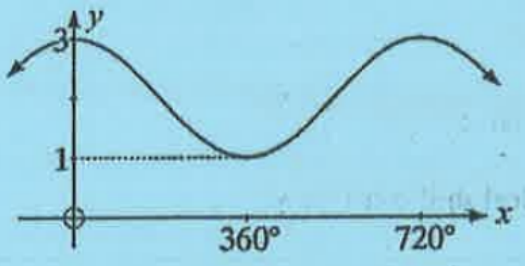
y=

Amplitude =

Period = , so b =

Horizontal shift constant, h=

the vertical shift constant, k=



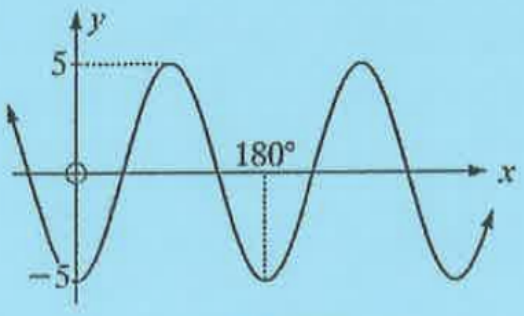
y =

Amplitude =

Period = , so b =

Horizontal shift constant, h=

the vertical shift constant, k=



Amplitude =

Period = , so b =

Horizontal shift constant, h=

the vertical shift constant, k=

y =

See your

LCQ

Assignment

7..... 144-146, 158-162, 166
and finish the Buffalo Problem.