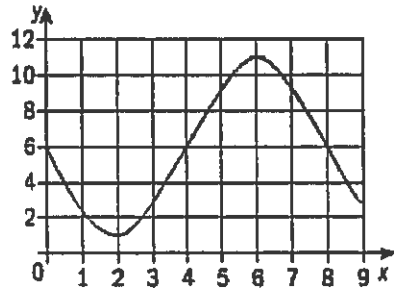
Trigonometry Test Review Name:_____

1)

The graph has a maximum at (6, 11) and a minimum at (2, 1)



Find the equation of the function graphed to the left.

a) Should this be a sine or cosine model?

b) Find the midline, D.

c) Find the Amplitude, A.

d) Use the graph to find the period.

e) Use the period to determine B.

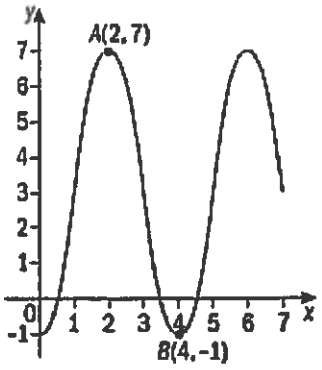
f) Watch out. This function is _____

g) Write the equation of the function:

2) The graph of f, for $0 \le x \le 7$, is shown.

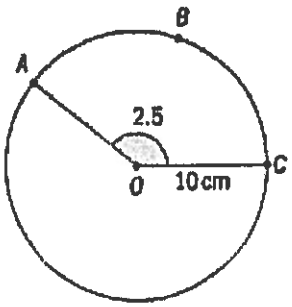
a Given that the function can be written in the form $f(x) = a\cos bx + c$, find the values of a, b and c.

b Write down the solutions to the equation $f(x) = 1$.



3) The diagram shows a circle, center O and radius 10 cm. $A\hat{O}C = 2.5$ radians.

a Find the length of arc ABC.



b An angle θ is subtended by an arc of length 12.5 mm at the center of a circle. Find the value of θ if the circle has radius 2.5 mm.

4) Change radians to degrees.

a) π b) $\frac{2\pi}{3}$ c) $\frac{5\pi}{2}$ d) 1.8

Change degrees to radians.

a) 90 b) 150 c) 200 d) 308

5) a) If cosΘ<0 and cscΘ>0, in which quadrant must Θ lie?

b) If $cos\theta = \frac{2}{7}$ and $\frac{3\pi}{2} < \theta < 2\pi$, find the exact value of: i) $sin\theta$ ii) $sec\theta$ iii) $tan\theta$

c) Sketch an angle of 400^0 in standard position on a unit circle. Find the y coordinate of the point where the terminal side intersects the unit circle, to the nearest *hundredth*.

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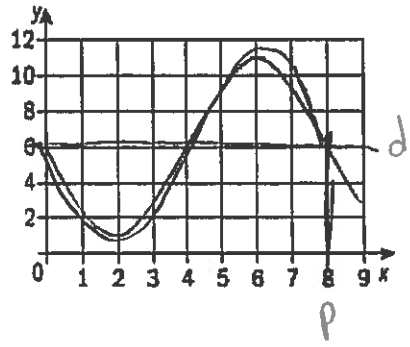
1)

The graph has a maximum at (6, 11) and a minimum at (2, 1)



Find the equation of the function graphed to the left.

a) Should this be a sine or cosine model? sine → starts @ midline

b) Find the midline, D. 6

c) Find the Amplitude, A. 5 → 11−6 or $\frac{11-1}{2}=5$

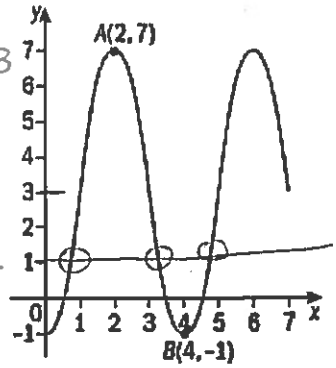
d) Use the graph to find the period. 8

e) Use the period to determine B. $BP=2\pi$ $\frac{B\cdot 8}{8}=\frac{2\pi}{8}=\frac{\pi}{4}$

f) Watch out. This function is negative

g) Write the equation of the function: $y=-5\sin\left(\frac{\pi}{4}x\right)+6$

2) The graph of f, for $0 \le x \le 7$, is shown. $f(x)=4\cos\left(\frac{\pi}{2}x\right)+3$



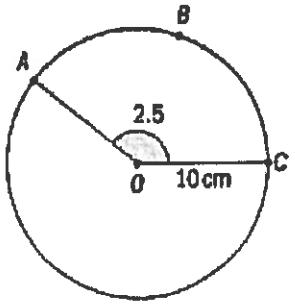
a Given that the function can be written in the form $f(x)=a\cos bx+c$, find the values of a, b and c. $a=4$ $c=3$ $P=4$ $B(4)=2\pi$ $B=\frac{\pi}{2}$

b Write down the solutions to the equation $f(x)=1$.

from graph on calculator

{.667, 3.33, 4.67}

3) The diagram shows a circle, center O and radius 10 cm. $A\hat{O}C = 2.5$ radians.



a Find the length of arc ABC.

$S=r\theta$

$S=2.5\times 10$

$S=25$

$\frac{2.5}{2\pi}=\frac{\overset{\frown}{ABC}}{2\pi(10)}$ or

b An angle θ is subtended by an arc of length 12.5 mm at the center of a circle. Find the value of θ if the circle has radius 2.5 mm.

$\frac{12.5}{2\pi(2.5)}=\frac{\theta}{360}$ or $S=r\theta$ or $\frac{12.5}{2\pi(2.5)}=\frac{\theta}{2\pi}$

$\theta=286.5$ $\frac{12.5}{2.5}=\frac{2.5\,\theta}{2.5}$ $\theta=5$

$5=\theta$

$\pi = 180°$ & $1^r = \frac{180}{\pi}$

4) Change radians to degrees.

a) π $180°$ **b)** $\frac{2\pi}{3}$ $120°$ **c)** $\frac{5\pi}{2}$ 450 **d) 1.8**

$1.8\left(\frac{180}{\pi}\right)$

103.1

Change degrees to radians.

a) 90 $\frac{\pi}{2}$ $\frac{90}{180}\pi$ **b) 150** $\frac{5\pi}{6}$ **c) 200** $\frac{200}{180}\pi$ $\frac{10}{9}\pi$ **d) 308** $\frac{308}{180}\pi$ $\frac{77\pi}{45}$

x− Sin +

5) a) If cosθ<0 and cscθ>0, in which quadrant must θ lie?

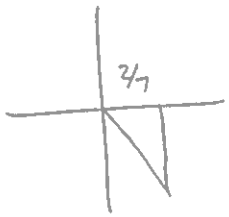
S+	a+
+r	C+

Q2

b) If $\cos\theta = \frac{2}{7}$ **and** $\frac{3\pi}{2} < \theta < 2\pi$**, find the exact value of: i)** $\sin\theta$ **ii)** $\sec\theta$ **iii)** $\tan\theta$

rec cos

Q4



$\cos^2\theta + \sin^2\theta = 1$

$\left(\frac{2}{7}\right)^2 + \sin^2\theta = 1$

$\sin^2\theta = 1 - \frac{4}{49}$

$\sin\theta = \sqrt{\frac{45}{49}} = -\frac{3\sqrt{5}}{7}$

$= \frac{-\sqrt{45}}{\sqrt{49}}$

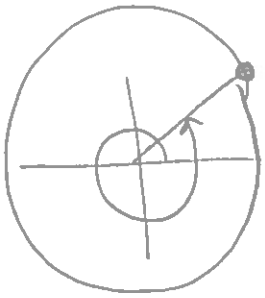
$-\frac{3\sqrt{5}}{7}$

$\frac{7}{2}$

$\frac{-\frac{3\sqrt{5}}{7}}{\frac{2}{7}}$

$= -\frac{3\sqrt{5}}{2}$

c) Sketch an angle of 400⁰ in standard position on a unit circle. Find the y coordinate of the point where the terminal side intersects the unit circle, to the nearest *hundredth*.



(cos400, sin400)

$y = \sin 400 = \sin 40 = .64$