Math 120 Group Work <u>Review for exam #1</u> Name_____

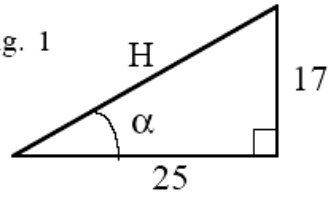
(Of course this is not a complete review…you should study old quizzes, worksheets, & homework.)

1 · See. Fig. 1. Give each answer rounded to 2 decimal places.

(a) H = _____ (b) tan(α) = _____

(c) α = _____ (degrees) (d) α = _____ (radians)

Fig. 1



2 .Give EXACT values of the following. (No need to show work on this one.)

(a) cos(120°) = _____ (b) tan($5\pi/4$) = _____

(c) sec($-\pi/4$) = _____ (d) convert 150° = _____ radians

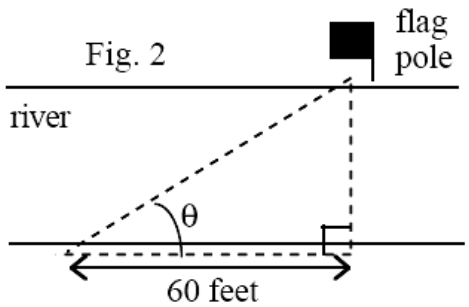
3 .A wheel has a radius of 15 inches, and it makes one revolution in 2 minutes.

(a) What is the wheel's angular speed in degrees per minute? _____

(b) How many feet does a bug standing on the edge of the wheel travel in one minute? _____

4 .See Fig. 2. If $\theta = 41^\circ$, how wide is the river? _____ (2 decimal places)

Fig. 2



5. An angle θ is shown on the unit circle in Fig. 3. On the unit circle

(a) label a point $A \neq \theta$ so $\tan(A) = \tan(\theta)$.

(b) label a point $B \neq \theta$ so $\sin(B) = \sin(\theta)$.

(c) label a point $C \neq \theta$ so $\cos(C) = \cos(\theta)$.

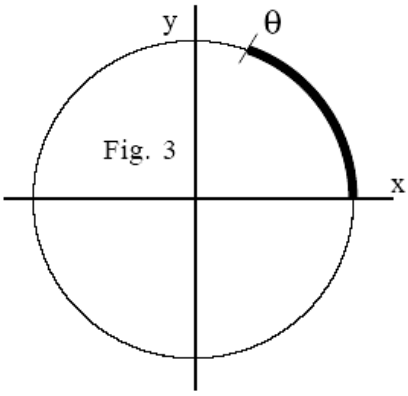


Fig. 3

6. If $\cos(\alpha) = C$ then (Your answers should be in terms of C.)

(a) $\cos(6\pi + \alpha) =$ _____ (b) $\cos(2\pi - \alpha) =$ _____

(c) $\sec(\alpha) =$ _____ (d) $\cos(\alpha + \pi) =$ _____

(7) 7. An ant is 45 feet from the bottom of a statue on a pedestal. When the ant looks up at the top of the statue the angle α is 47°. When the ant looks at the bottom of the statue the angle β is 31°. How tall is the statue? S = _____ (1 decimal place)

(The drawing is not to scale.)

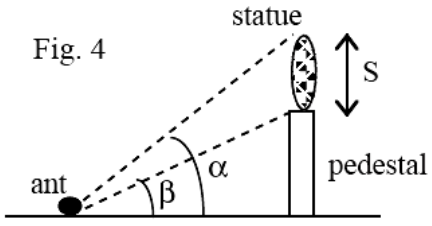


Fig. 4

8 .A weight is attached to a spring and then put into motion. The height H (in cm) of the weight above the floor at time t seconds is $H = 12 + 7\sin\left(\frac{\pi}{6}t\right)$

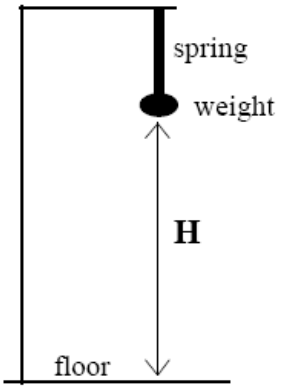
(a) What is the largest value that H attains? _____

(b) What is the H intercept? _____

(c) What is the amplitude of H? _____

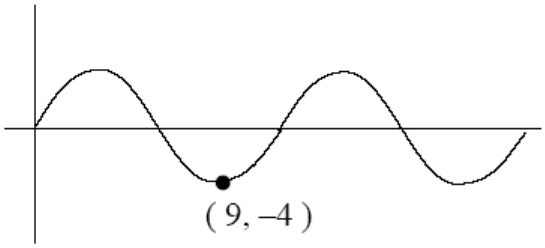
(d) What is the period of H? _____

(e) Is H increasing or decreasing when t = 17? _____



9 ·Give the equation of the trigonometric function graph in the figure.

y = _____



10 ·Find θ , $180^\circ \le \theta \le 270^\circ$, so $\cos(\theta) = -0.23$. θ = _____ (1 decimal place)

11. (a) Label the 3 sides of the triangle in Fig. 5 so $\theta = \arctan(x/11)$.

(b) Then $\cot(\theta)$ = _____

(c) Then $\sin(\theta)$ = _____

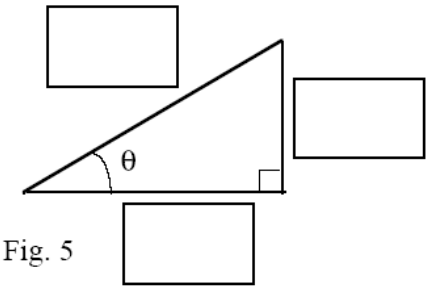


Fig. 5