

Math 1613 - Trigonometry

Exam #2 - 2018.10.10

Name: _____

1. Fill out the following table completely:

θ°	0°	30°	45°	60°	90°	120°	135°	150°	180°
θ (rad)									
$\sin(\theta)$									
$\cos(\theta)$									

2. Convert 1355° to radian measure.

3. Convert $-\frac{17}{3}\pi$ radians to degree measure.

4. Find the measure of the central angle θ corresponding to a circle of radius 12 inches whose arc has length 63 inches.

5. Find the measure of the central angle θ corresponding to a circle of radius 12 inches and sector of area 96π square inches.

6. The minute hand of a standard 12 hour wall clock is 7 inches long, the hour hand is 4 inches long.

(a) Determine the angular velocity (in rad/sec) of the tip of each hand.

(b) Compute the velocity (in ft/sec) of the tip of each hand.

7. Sketch the graph of the function $y = \frac{2}{3} \cos\left(\frac{4}{5}x + \frac{\pi}{2}\right) - 1$ over two periods.

8. Sketch the graph of the function $y = \frac{3}{2} \sin\left(-\frac{1}{3}x + \frac{\pi}{6}\right) + \frac{1}{2}$ over two periods.

9. Sketch the graph of the function $y = \frac{1}{2} \tan\left(3x - \frac{\pi}{4}\right) + 4$ over two periods.

10. Sketch the graph of the function $y = -\frac{1}{2} \cot\left(3x + \frac{\pi}{4}\right) + 4$ over two periods.

11. Sketch the graph of the function $y = \frac{2}{3} \sec\left(\frac{4}{5}x + \frac{\pi}{2}\right) - 1$ over two periods.

12. Sketch the graph of the function $y = \frac{3}{2} \csc\left(-\frac{1}{3}x + \frac{\pi}{6}\right) + \frac{1}{2}$ over two periods.

13. Find an equation of a function of the form $y = a \cos(bx + c) + d$ whose graph is given by the following figure:

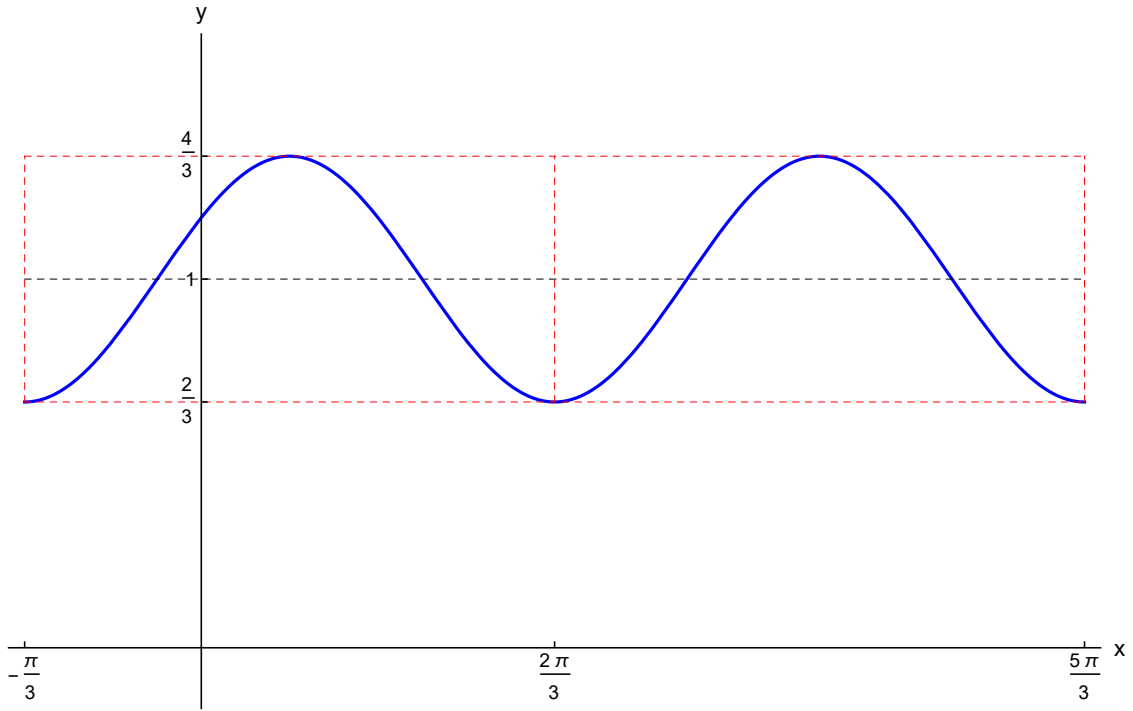


FIGURE 1. This is the graph of some cosine function, figure it out!