MHF4U **QUIZ – CH6** **6.1 - 6.4** **NAME:**

/28

K =12 **A = 8** **T = 8**

Multiple Choice (EACH QUESTION WORTH 2 MARKS with solution).
Identify the choice that best completes the statement or answers the question .Show your solution.

____ 1. What is the arc length if the central angle is 45° and the radius of a circle is 3 cm? [2A]
a. 3.75 cm
b. 2.356 cm
c. 0.4166 cm
d. 2.25 cm

____ 2. Convert 135° to radians. [2K]
a. $\frac{3\pi}{4}$
b. $\frac{24\ 300}{\pi}$
c. $\frac{4\pi}{3}$
d. $\frac{5\pi}{4}$

____ 3. If a ball travels around a circle of radius 4 m in 1.5 minutes, what is the angular speed of the ball? [2T]
a. $\frac{\pi}{45}$ radians/s
b. $\frac{2\pi}{1.5}$ radians/s
c. $\frac{2\pi}{45}$ radians/s
d. $\frac{\pi}{30}$ radians/s

____ 4. Which of the following functions has the longest period? [2T]
a. $y = 6\sin(3x) + 20$
b. $y = 2\sin(0.5x) - 11$
c. $y = 7\cos(\pi x) + 13$
d. $y = 8\cos(2x) - 4$

____ 5. Convert $\frac{11\pi}{6}$ radians to degrees. [2K]
a. 330°
b. 300°
c. 98.6°
d. 98.18°

____ 6. Which is equivalent to $-\frac{\sqrt{3}}{2}$? [2K]
a. $\cos\left(\frac{5\pi}{6}\right)$
b. $\cos\left(\frac{\pi}{6}\right)$
c. $\sin\left(\frac{\pi}{6}\right)$
d. $\sin\left(\frac{5\pi}{6}\right)$

____ 7. In which quadrant is the following true? [2A]
$\csc\theta > 0$ and $\sec\theta < 0$
a. 3
b. 4
c. 2
d. 1

____ 8. A man programs his sprinkler system using the equation 15 sin (*kt*), where *t* is in seconds. If he wants it to have a period of $\frac{6}{5}$ s, what should *k* be? [2A]

a. $\frac{3\pi}{6}$
b. $\frac{5\pi}{6}$
c. $\frac{6\pi}{3}$
d. $\frac{5\pi}{3}$

____ 9. If a point on the Cartesian plane lies at (4, 2), what is the angle made between the line containing the point and the origin, and the negative x-axis? [2K]

a. 2.034 radians
b. 0.463 radians
c. 2.677 radians
d. 1.523 radians

____ 10. Starting on the positive *x*-axis and moving $\frac{1}{3}$ of the way around a circle that has radius 3 m, how far would one travel? [2T]

a. 360 m
b. 0.69 m
c. 3.14 m
d. 6.28 m

____ 11. If a man walks around a circle 2.125 times, how many metres did he walk if the radius of the circle is 4 m? [2A]

a. 25.525 m
b. 47.123 m
c. 50.265 m
d. 53.407 m

____ 12. What is the exact value of $\sin\left(\frac{3\pi}{4}\right)$? [2K]

a. $\frac{2}{\sqrt{2}}$
b. $-\frac{1}{\sqrt{2}}$
c. 0.7071
d. $\frac{1}{\sqrt{2}}$

____ 13. If the central angle is $\frac{4\pi}{3}$ radians, what should the radius of a circle be to make the arc length 1 m? [2T]

a. 0.238 m
b. 2.356 m
c. 0.424 m
d. 4.188 m

____ 14. What is the period of the function $y = 10\sin\left(\frac{6\pi}{4}\left(x - \frac{\pi}{2}\right)\right) + 25$? [2K]

a. $\frac{4}{6}$
b. $\frac{4}{3}$
c. $\frac{3}{4}$
d. $\frac{6}{3}$