

Quiz 4

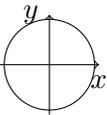
Show all your work

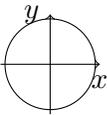
Name: _____

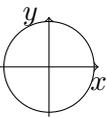
Score: ____/36

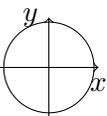
No Calculator allowed in this part.

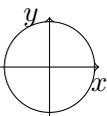
Problem 1: One mark each for a–h, two marks each for i–k.

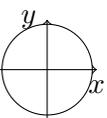
a. Express 495° in radians. Draw 

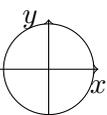
b. Express $-\frac{8}{3}\pi$ radians in degrees. Draw 

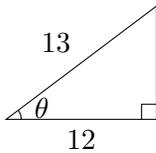
c. Evaluate $\csc(-\frac{7}{4}\pi)$ exactly. Draw 

d. Evaluate $\cot(\frac{5}{6}\pi)$ exactly. Draw 

e. Evaluate $\sin(-\frac{35}{2}\pi)$ exactly. Draw 

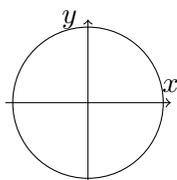
f. Evaluate $\sec(450^\circ)$ exactly. Draw 

g. Evaluate $\cos(-9\pi)$ exactly. Draw 

h. Evaluate $\tan(\theta)$ exactly where θ is as marked 

i. If the wrapping function $W(\theta) = (-\frac{1}{2}, \frac{\sqrt{3}}{2})$, find all solutions θ for this point on the unit circle.

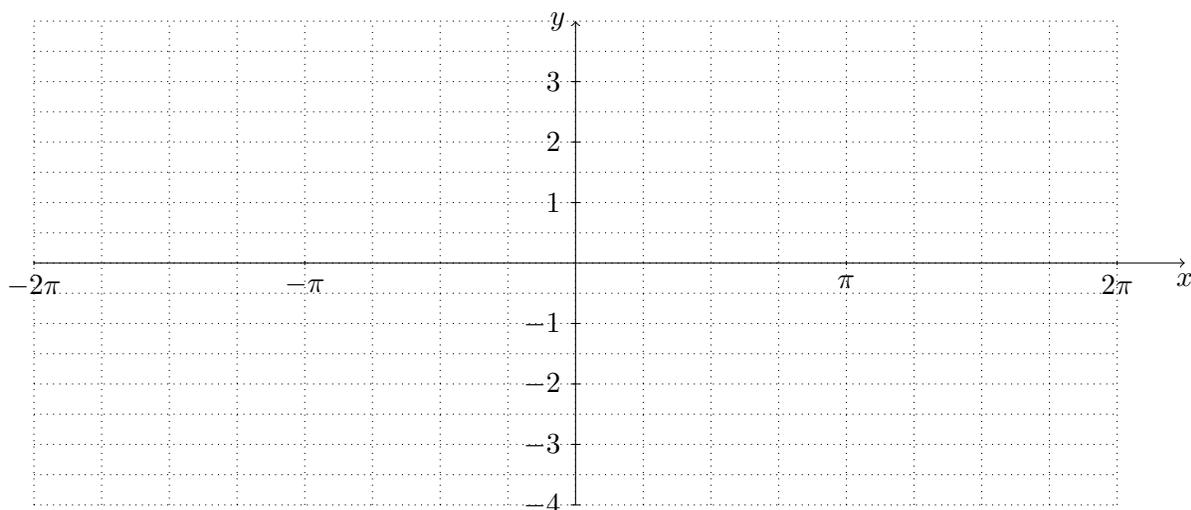
j. If $\tan(\theta) = -2$ for an angle θ in Quadrant IV, draw a triangle to determine the values of $\sin(\theta) =$ and $\sec(\theta) =$



k. Express $\tan(\theta)$ in terms of $\sec(\theta)$ for an angle θ in Quadrant II.

Score: /14

Problem 2: Graph $f(x) = -\frac{3}{2}\sin(2\theta - \frac{\pi}{2}) + 1$. Put key points as solid dots on the grid provided. Fill the entire x -axis.



Score: /4

Quiz 4

Show all your work

Name: _____

Calculators permitted in this part.

Problem 3: A wind turbine of rotor diameter 15 m makes 62 revolutions per minute. Find the angular speed (in radians per second) and the linear speed (in metres per second) of the rotor tip.

Score: /3

Problem 4: To measure the height of a cloud ceiling over an airport, a searchlight is directed straight upward to produce a lighted spot on the clouds. Five hundred metres away, an observer reports the angle of elevation to the spot to be 32.2° . How high (to the nearest metre) are the clouds above the airport?

Score: /4

Problem 5: Find the measure of the acute angle formed by the line $y = \frac{1}{3}x - 5$ and the x -axis. Provide a 2-decimal-place accuracy.

Score: /2

