

Quiz1 on PreCalculus 2

Name: _____ Student ID: _____ Section: _____

Please show your work! No credit for answer only!

1. (6 points) For a circle of radius 5, find the lengths of the arcs subtending the following angles.

(a) $\frac{\pi}{2}$ rad;

(b) 70° ;

(c) 1.5 rev.

Solution: First step, we convert all the measuers into radians. Then we apply the fomula $S = \theta r$

(a)

$$S = \frac{\pi}{2} 5 ft$$

(b) $70^\circ = 70^\circ \frac{2\pi \text{ rad}}{360^\circ} = \frac{7\pi}{18} \text{ rad}$

$$S = \frac{7\pi}{18} 5 ft = \frac{35\pi}{18} ft$$

(c) $1.5 \text{ rev} = 1.5 \text{ rev} \frac{2\pi \text{ rad}}{1 \text{ rev}} = 3\pi \text{ rad}$

$$S = 3\pi 5 ft = 15\pi ft$$

2. (4 points) Find out the quotient and the remainder when

$$x^4 - 3x^3 + 2x - 5 \text{ is divided by } x^2 - x + 1$$

$$\begin{array}{r}
 x^2 - x + 1 \quad \overline{) \begin{array}{l} x^4 - 3x^3 + 0x^2 + 2x - 5 \\ \underline{x^4 - x^3 + x^2} \\ -2x^3 - x^2 + 2x \\ \underline{-2x^3 + 2x^2 - 2x} \\ -3x^2 + 4x - 5 \\ \underline{-3x^2 + 3x - 3} \\ x - 2 \end{array} \\
 \end{array}$$

So we have quotient $x^2 - 2x - 3$ and remainder $x - 2$.