Question 9

a) i) $\angle ABC = \angle ACB = \theta$

ΔACD is isosceles $(AC = CD = 1)$

$\therefore \angle CAD = \angle ADC$

$\angle BAC = \frac{3\pi}{5}$

$\theta = \frac{\pi}{5} = 36$

$\angle ADC = (180 - \frac{\pi}{5}) \div 2$

$= 72$

$72 = 2\theta \frac{\pi}{5}$

$\therefore \angle ADC = 2\theta$

~~ΔABD~~

$\angle ABD = \angle ACD = \theta$

$AC = AB = 1$

AD is common

$\therefore \Delta DBA$ and ΔABC are similar

ii) $x^2 - x - 1 = 0$

iii)

b)