

Quiz 4

This quiz is graded out of 10 marks. No books, calculators, notes or cell phones are allowed. You must show all your work, the correct answer is worth 1 mark the remaining marks are given for the work. If you need more space for your answer use the back of the page.

Question 1. pg.54#3t (4 marks) Solve for x:

$(x^2 - 75)(3x^2 + 4x - 6) = 0$ By the Zero Factor Property:

$$(x^2 - 75) = 0$$

$$x^2 = 75$$

$$x = \pm\sqrt{75}$$

$$x = \pm 5\sqrt{3}$$

$$3x^2 + 4x - 6 = 0$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$= \frac{-4 \pm \sqrt{4^2 - 4(3)(-6)}}{2(3)}$$

$$= \frac{-4 \pm \sqrt{16 + 72}}{6}$$

$$= \frac{-4 \pm \sqrt{88}}{6}$$

$$x = \pm 5\sqrt{3}$$

$$\text{and } x = \frac{-2 \pm \sqrt{22}}{3}$$

Question 2. pg.60#3i (4 marks) Solve for x:

$$x - \frac{6}{2-x} = \frac{3x}{x-2}$$

$$x - \frac{6}{-(x-2)} = \frac{3x}{x-2}$$

$$x + \frac{6}{x-2} = \frac{3x}{x-2}$$

$$x(x-2) + \frac{6(x-2)}{x-2} = \frac{3x(x-2)}{(x-2)}$$

$$x^2 - 2x + 6 = 3x$$

$$x^2 - 5x + 6 = 0$$

$$(x-2)(x-3) = 0$$

$$\downarrow \quad \downarrow$$

$$x=2 \quad x=3$$

LCM = x-2

Verify solution

	x=3	x=2
2-x:	2-3 ≠ 0	2-2 = 0 ← not valid
x-2:	3-2 ≠ 0	

$$x = 3$$

Question 3. pg.66#27 (2 marks) Find the distance between (a, -c) and (-a, c):

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$= \sqrt{(-a - a)^2 + (c - (-c))^2}$$

$$= \sqrt{(-2a)^2 + (2c)^2} = \sqrt{4a^2 + 4c^2}$$