

## Quiz 2

**Question 1.** (3 marks)

Solve the following equation:

$$\frac{3}{x^2+3x} - \frac{1}{x} = \frac{1}{3+x}$$

$$\Rightarrow \frac{3}{x(x+3)} - \frac{1}{x} = \frac{1}{3+x} \quad \begin{array}{l} \text{LCD} = x(x+3) \\ \text{MULTIPLY} \end{array}$$

$$3 - (1)(x+3) = x$$

$$3 - x - 3 = x$$

$$-x = x$$

$$0 = 2x \Rightarrow x = 0$$

**Question 2.** (3 marks)

Factor the following:

$$\begin{aligned} 4x^2 - 12x + 9 &= 4x^2 - 6x - 6x + 9 = 2x(2x-3) - 3(2x-3) \\ &= (2x-3)(2x-3) = (2x-3)^2 \end{aligned}$$

NOT VALID  
∴ NO SOLUTIONS

4 · 9 = 36  
a = -6  
b = -6

**Question 3.** (4 marks) Graph the following by finding the x-intercept(s) if possible, the vertex and the y-intercept:

$$y = 2x^2 + 8x - 10 = 2(x^2 + 4x - 5)$$

x-int:  $y = 0$   
 $0 = 2(x^2 + 4x - 5)$   
 $0 = 2(x+5)(x-1)$   
 $\therefore x = -5, 1$   
 $(-5, 0), (1, 0)$

y-int:  $x = 0$   
 $y = -10$   
 $\therefore (0, -10)$

VERTEX:  
 $x = \frac{-b}{2a} = \frac{-8}{2(2)} = -2$   
 $y = 2(-2)^2 + 8(-2) - 10 = -18$

