

$$d) i) x^2 + 9x + 8 = 0$$

$$(x+1)(x+8) = 0$$

$$\underline{x = -1}$$

$$\underline{x = -8}$$

$$ii) 12x^2 - 5x - 3 = 0$$

$$(4x-3)(3x+1) = 0$$

$$\underline{x = 3/4}$$

$$\underline{x = -1/3}$$

$$iii) 2x^2 + 17x = -30$$

$$2x^2 + 17x + 30 = 0$$

$$(2x+5)(x+6) = 0$$

$$x = -5/2$$

$$x = -6$$

$$iv) x^2 - 256 = 0$$

$$(x+16)(x-16) = 0$$

$$\underline{x = -16}$$

$$\underline{x = +16}$$

$$e) (x+5)^2 - x^2 - 32 = (x+1)(x+2) - x^2$$

$$(x+5)(x+5) - x^2 - 32 = x^2 + 2x + x + 2 - x^2$$

$$x^2 + 5x + 5x + 25 - x^2 - 32 = 3x + 2$$

$$10x + 25 - 32 = 3x + 2$$

$$7x = 2 + 7$$

$$7x = 9$$

$$x = \frac{9}{7}$$

Question 3

$$a) i) 12x^2 = 31x + 15 \Rightarrow 12x^2 - 31x - 15 = 0$$

$$a = 12$$

$$b = -31$$

$$c = -15$$

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

$$\frac{-(-31) \pm \sqrt{(-31)^2 - 4(12)(-15)}}{2(12)} = \frac{31 \pm \sqrt{1681}}{24}$$

$$\frac{31 + \sqrt{1681}}{24} = \underline{\underline{3.00}}$$

$$\frac{31 - \sqrt{1681}}{24} = \underline{\underline{-0.42}}$$