

Mock exam - AULON PASHOJA-2009355

1)i $2x + 8x + 15 = 0$

$(x+5)(x+3) = 0$

$x = -5, x = -3$

ii $x^2 - 225 = 0$

$(x+15)(x-15) = 0$

$x = -15, x = 15$

iii $x^2 + 11x + 30 = 0$

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

$x = -6, x = -5$

iv $x^2 - 6x + 8 = 0$

$(x-2)(x-4) = 0$

$x = 2, x = 4$

v $2x^2 + 9x + 7 = 0 \rightarrow^{x^2} 4x^2 + 18x + 14 = 0$

$(2x+5)(x+2)$

$(2x+7)(2x+2) = 0$

$2x^2 + 4x + 5x + 10$

$4x^2 + 4x + 14x + 14 = 0$

$4x^2 + 18x + 14 = 0$

$2x = -7$

$2x = -2$

$x = -3.50$

$x = -1$

2. $12x^2 + 5x = 7$

$12x^2 + 5x - 7 = 0$

$$\frac{-5 \pm \sqrt{5^2 - 4(12)(-7)}}{2(12)} = \frac{-5 \pm \sqrt{361}}{22} = \frac{-5 \pm 19}{22}$$

$x = 0.64, x = -1.09$

$$\begin{array}{rcl}
 3. \quad 5x + 2y = 22^{x^2} & ; & 15x + 6y = 66 \\
 4x + 3y = 19^{x^2} & ; & 8x + 6y = 38 \\
 & & \underline{-} \\
 & & 7x = 28 \\
 & & x = \frac{28}{7}
 \end{array}$$

$$x = 4$$

$$4(4) + 3y = 19$$

$$16 + 3y = 19$$

$$3y = 19 - 16$$

$$3y = 3$$

$$y = \frac{3}{3}$$

$$y = 1$$

$$4) \quad x^8 \times x \times x^9 = x^{18}$$

$$ii) \quad (2x^3)^3 = 8x^9$$

$$iii) \quad \frac{x^{12} \times x^8}{x} = \frac{x^{20}}{x} = x^{19}$$

$$iv) \quad 5x^2 \times 3x^4 = 15x^6$$

$$v) \quad \frac{10x^5}{2x^2} = 5x^3$$

$$5) \quad 2(x^2 + y^2) + x^2(x - y) + 3xy - x^3$$

$$2x^2 + 2y^2 + x^3 - x^2y + 3xy - x^3$$

$$2x^2 + 2y^2 - x^2y + 3xy$$

$$2x + \frac{2y^2}{x} - xy + 3y$$

$$2x + \frac{2y^2}{x} + y - xy + 3y$$

$$2x^2 + 2y^2 - x^2y + 3xy$$

ignore the

$$6i) 5(2x+1) = 4(3x+2)$$

$$10x+5 = 12x+8$$

$$2x+3=0$$

$$2x = -3$$

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

$$x = -1.50$$

$$ii) 12x+5 = 4x-1$$

$$8x+4=0$$

$$8x = -4$$

$$x = -\frac{4}{8}$$

$$x = -0.50$$

$$iii) \frac{6(4x-1)}{3} = \frac{6(5x+2)}{2} \times 6 \rightarrow 2(4x-1) = 3(5x+2)$$

$$8x-2 = 15x+6$$

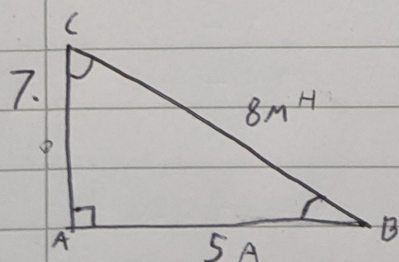
$$15x+6 = 8x-2$$

$$15x-8x = -2-6$$

$$7x = -8$$

$$x = -\frac{8}{7}$$

$$x = -1.14$$



$$i) \cos x = \frac{5}{8}, \cos^{-1}\left(\frac{5}{8}\right) = 51.32^\circ$$

$$ii) \text{Angle } C = 180 - (90 + 51.32) = 38.68^\circ$$

$$iii) \sin 51.32 = \frac{AC}{8} \rightarrow AC = \sin 51.32 \times 8, AC = 6.25M$$