Revision Sheet 1: Algebra 1a | 6th Year OL Maths | Due Date:

Q1. Evaluate the following expressions when a = 1, b = -2 and c = 3 (Chap 2 pg 44/45)

i) $3a + 2b$ Ans: -1
ii) $5ab - bc$ Ans: -4
iii) $2a^2 + 3b^2$ Ans: 14
iv) $\frac{2a - 2b}{c}$ Ans: 2

Q2. Multiply out and simplify the following: (Chap 2 pg 52)

i) $(x + 3)(x - 7)$ Ans: $x^2 - 4x - 21$
ii) $(2x - 1)(x + 4)$ Ans: $2x^2 + 7x - 4$
iii) $(x + 6)^2$ Ans: $x^2 + 12x + 36$
iv) $(2x - 1)^2$ Ans: $4x^2 - 4x + 1$

Q3. Write the following as single fractions: (Chap 2 pg 51)

i) $\frac{2x + 1}{3} + \frac{3x - 2}{2}$ Ans: $\frac{13x - 4}{6}$
ii) $\frac{x - 5}{5} - \frac{2x + 1}{3}$ Ans: $\frac{-7x - 20}{15}$

Q4. Factorise the following expressions: (Chap 2 pg 53/54/56/57)

i) $2x^2 + 18x$ Ans: $2x(x + 9)$
ii) $ax - ay + bx - by$ Ans: $(a + b)(x - y)$
iii) $x^2 - 3x - 18$ Ans: $(x - 6)(x + 3)$
iv) $a^2 - 16$ Ans: $(a - 4)(a + 4)$
v) $5x^2 + 13x - 6$ Ans: $(5x - 2)(x + 3)$
vi) $25x^2 - 49y^2$ Ans: $(5x - 7y)(5x + 7y)$
vii) $8x^2 + 6x - 9$ Ans: $(4x - 3)(2x + 3)$

Q5. Simplify the following expressions: (Chap 2 pg 59)

i) $\frac{24x^2y^2}{12xy}$ Ans: $2xy$
ii) $\frac{-15a^3b^2}{3ab}$ Ans: $-5a^2b$
iii) $\frac{5x^2 + 13x - 6}{x + 3}$ Ans: $5x - 2$

Q6. Write the following as a single fraction: (Chap 2 pg 62)

i) $\frac{2}{x + 1} + \frac{3}{x - 2}$ Ans: $\frac{5x - 1}{(x + 1)(x - 2)}$
ii) $\frac{1}{x - 8} - \frac{2}{x + 2}$ Ans: $\frac{18 - x}{(x - 8)(x + 2)}$