

(1)

Session 2 : Algebra 1

Write these algebraic expressions in a simpler way.

(i) $5a + 6a - 7a$ (ii) $7a + 3b - 5a - b$ (iii) $5(2a + 1) - 3(a - 4)$

(2) (a) Simplify $3 + 6x - 8 - 4x$. (b) What is the value of $4a - 6b$ when $a = -5$ and $b = 2$?

(3) Solve the equations (i) $2(4 - x) = 17 - 8x$. (ii) $9x - 1 = 4(x + 5)$ (iii) $5x + 6 - \frac{4x - 1}{2} = 8$

(4) (a) Expand the following expression, simplifying your answer as far as possible

$$(3x - 4)(x + 2)$$

(b) Factorise the expression:

$$5ab + 10b^2$$

(c) Make d the subject of the formula:

$$c = 2a - 4d$$

(5) Solve the equations.

(a) $2x + 3 = 12$

(b) $5x - 4 = 3x + 15$

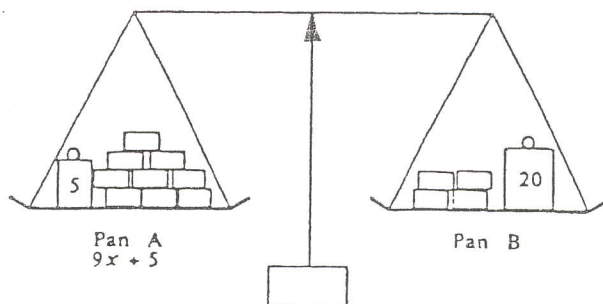
(c) $5(x - 1) = 2x + 4$

(6) Expand and simplify

$$(x + 4)^2$$

(7) This picture shows some packets of rice in the pans of a weighing machine.

Each packet of rice weighs x kg.



In pan A there are 9 packets of rice and a weight of 5 kg.

An expression for the total weight in kg in Pan A is $9x + 5$.

An expression for the total weight in kg in Pan B is $4x + 20$.

The total weight in each pan is the same.

(a) Write down an equation in terms of x to represent this information.

(b) Use your equation to calculate the weight, x kg, of one packet of rice.