Ex 13 Algebraic Fractions

Section A (Non-calculator)

1 Evaluate –

a) $x^2 + \frac{y}{z}$ when x = -4 and y = –2, z = -1 b) $23 – 5 \cdot 6 \div 7$

Section B (Knowledge)

2 Solve algebraically the equation

$$\frac{x}{3} = \frac{(1-2x)}{5}$$

3 Express as a single fraction in its simplest form

$$\frac{2}{y} + \frac{(1-y)}{y^2}, y \neq 0$$

4 Express as a single fraction in its simplest form

$$\frac{4}{x} - \frac{3}{(x-2)}$$

5. In each of the following formulae make the letter in brackets the subject:
(a) $K = 30L$ (L) (b) $A = \frac{1}{2}bh$ (h) (c) $V = \frac{1}{3}\pi r^2 h$ (r)

6. Express the following as a single fraction in its simplest form
$\frac{1}{4x} - \frac{1}{3x}$, where $x \neq 0$

Section C (Mixed)

7. The stem and leaf diagram opposite represents sales of a new CD in a music store over the first 14 days of going on sale.

5	2 7
6	4 5 7 9
7	1 3 3 8
8	0 4 4
9	2

a) Calculate the mean number of CDs sold over the 14 day period.
b) Write down the median.

8. Factorise - a) $6a + 8c$ b) $9t^2 – 25$

9. This shape consists of a cone, a cylinder and a hemisphere. Calculate its total volume.