(b) (i) Number of sticks that could be bought at $\$x$ each $= \frac{300}{x}$

(ii) Number of sticks that could be bought at the new price $= \frac{300}{x-5}$

$$\frac{300}{x-5} - \frac{300}{x} = 2$$

$$\frac{1500}{x(x-5)} = 2 \qquad \textbf{(from (a))}$$

$$x(x-5) = 750$$

$$\therefore\ x^2 - 5x - 750 = 0$$

(iii) $(x-30)(x+25) = 0$

$x - 30 = 0$ **or** $x + 25 = 0$

$x = 30$ **or** $x = -25$ (rejected)

$\therefore\ x = 30$

$\therefore$ the cost of each memory stick was \$30.

$x = -25$ is rejected because the cost $\$x$ should be positive.

Revision Practice 5

1. Solve the following equations.

(a) $8x - 3(x + 13) = 1$

(b) $\frac{5}{y} = 9$

(c) $2x^2 - 5x - 3 = 0$

(d) $7x^2 - 5x = -18$

2. Solve the following equations.

(a) $\frac{2x-3}{4} - \frac{x-5}{5} = 6$

(b) $\frac{9}{x+1} = 7$

(c) $\frac{x-9}{3} = 5 + \frac{17}{x+2}$

(d) $\frac{x}{x+4} - \frac{4x+5}{x+2} = 0$

3. Solve the following equations.

(a) $(2t - 1)^2 = 121$

(b) $\frac{4}{x+6} = \frac{x+2}{3}$

4. Solve the following equations.

(a) $4(2x - 3) - 5 = 8 - (6 - x)$

(b) $y^2 + 9 = 6y$

5. Solve the following equations.

(a) $(3x - 1)(x + 2) = 20$

(b) $(2x + 3)^2 = 4x - 1$

6. Solve the simultaneous equations $4x + y = 10$ and $2x - 3y = 12$.

7. Let $x = 0.\dot{3}\dot{6}$, where $0.\dot{3}\dot{6}$ denotes the recurring decimal $0.363636\ldots$.

(a) Find the value of $100x - x$.

(b) Hence express $0.\dot{3}\dot{6}$ in the form $\frac{p}{q}$, where p and q are integers.