Chapter 8

Check in

1 a $<$ **b** $>$ **c** $<$ **d** $>$
  e $<$ then $\leq$

2 a $m + 2t$ **b** $5x - 5y$
  c $^-2p + 11 + 4v$ **d** $^-2f - 4g - 8$

3 a i $15p - 6$ **ii** $^-24 + 18x$
    iii $x^2 + 5x$ **iv** $15p^2 - 12p$
  b i $52p - 36m$ **ii** $30 + 30T$

4 a Equation   **b** Expression
  c Expression   **d** Formula/function

5 a $x = \dfrac{y-1}{2}$ **b** $x = \dfrac{2y-5}{3}$

Exercise 8A

1 a $x = 8$ **b** $x = ^-1$

2 a $x = 3$ **b** $x = 3$

3 a $x = 6$ **b** $x = 24$ **c** $x = ^-27$

4 a $p = 5$ **b** $x = 9$

5 a $d = 2$ **b** $x = 72$

6 a $x = 4$ **b** $x = 4$

7 a $x = 3$ **b** $x = 2$ **c** $n = 12$

8 a $x = 5$ **b** $y = 2$

9 a $y = 1$ **b** $x = 3$

10 a $4(x + 3) = 32$ **b** $x = 5$

11 a $x + x + 2 + x + 4 = 6x$ **b** $2 = x$, sides are 2, 4 and 6 cm

12 a $2y + 8 = 32$ **b** 12 cm

13 a $x + 20$ **b** $2x + 20$ **c** 55

14 a $2x + 19$ cm   **b** 5.5

15 5 cm and 9 cm

16 9 years old and 12 years old

17 23, 24 and 25

18 21, 23 and 25

19 112 and 114

20 a Let $x =$ cost of a child's ticket. Then $2x =$ the cost of an adult ticket.
  Mr and Mrs Brown + 5 children:
  $2x + 2x + 5x = 315$, or $9x = 315$
  b Child's ticket = 35 cents; adult's ticket = 70 cents

21 $2000 - 5t = 75$, $t = 385$ (Thus, the cost of each ticket is $3.85)

22 $2(3n + 7) = 80$, $n = 11$

23 $50x - 900 = 900$, therefore $x = 36$

Exercise 8B

1 **a** 2   **b** 10   **c** 0.5   **d** 2.5

2 Enri forgot the brackets. This is the correct working and solution:

$$2 = \frac{22}{x+4} \qquad \text{[multiply by } x+4]$$

$$2(x+4) = 22 \quad \text{[divide by 2]}$$

$$x+4 = 11 \qquad \text{[subtract 4]}$$

$$x = 7$$

3 **a** 4   **b** 7   **c** 5   **d** 13

    e 4   **f** 17

4 $\dfrac{570}{x+7} = 15$, so $x = 31$

5 18

6 **a** $\dfrac{145}{x-8} = 5$

    b 37

7 **a** 14   **b** 25

8 **a** -2   **b** -1

9 **a** 7   **b** 1.3