10. a) no **b)** yes **c)** yes **d)** yes

11. a) $3s + 7 = 40$ **b)** $s = 11$ cm

12. a) $150 + 72p = r$ **b)** $1302 **c)** 25

10.3 Modelling and Solving Two-Step Equations: $\frac{x}{a} + b = c$

1. a) isolate **b)** reverse, add, divide
   c) substituting, value

2. a) $x = 14$ **b)** $a = 8$

3. Models will vary. **a)** $x = 10$
   b) $y = 6$ **c)** $n = -36$ **d)** $c = -49$

4. a) Subtract 2 from each side, then multiply both sides by 6.
   b) Add 6 to each side, then multiply both sides by -3.
   c) Subtract 7 from each side, then multiply both sides by -5.
   d) Add 12 to each side, then multiply both sides by 11.

5. a) $d = -8$ **b)** $n = 32$ **c)** $b = 51$
   d) $p = -13$

6. a) yes **b)** yes **c)** no **d)** yes

7. Equations will vary. Example:
   $\frac{j}{8} + 400 = 475, j = 600$

8. $f = 350$ km/h

9. a) $d = \frac{r}{3} + 137$ **b)** $636 **c)** $370

10.4 Modelling and Solving Two-Step Equations: $a(x + b) = c$

1. isolate **2.** undoing, opposite

3. dividing, distributive

4. answer, sides

5. a) $x = 6$ **b)** $x = 7$ **c)** $x = -3$
   d) $x = -4$

6. a) $t = 7$ **b)** $r = -18$

7. a) $x = 4$ **b)** $s = 146$ **c)** $x = 6$

8. a) Answers will vary. Example:
   $P = 4(l + 4)$ **b)** 60 m

9. a) $3(s + 5) = \frac{180}{2}$ **b)** 25 km/h

10 Link It Together

1. In these answers, d represents depreciation, a represents the age of the car, and c represents the cost of the car.
   a) $d = 1000a$ **b)** $d = a\left(\frac{c}{10}\right)$
   c) $d = (c - 2750)\frac{a}{50}$

2. $3000, $6000, $1035

3. Answers are in italics.

Age of Car (Yr)	Value of Car ($)
0	30 000
1	27 000
2	24 000
5	15 000
8	6000
10	0

10 Vocabulary Link

1. constant
2. distributive
3. reverse
4. equation
5. linear
6. isolate
7. numerical coefficient
8. opposite operations
9. variable

11 Get Ready

1. a) 0.8, 80% **b)** $\frac{2}{3}$, $66.\overline{6}$%
   c) $0.\overline{36}$ or 0.3636..., 36% or $36.\overline{36}$%
   d) $\frac{1}{3}$, $0.\overline{3}$, or 0.3333...

2. $\frac{1}{3}$, $0.\overline{3}$, $33.\overline{3}$%

3. a)

	1	2	3	4	5	6
A	A, 1	A, 2	A, 3	A, 4	A, 5	A, 6
B	B, 1	B, 2	B, 3	B, 4	B, 5	B, 6

   b) (A, 1), (A, 2), (A, 3), (A, 4), (A, 5), (A, 6), (B, 1), (B, 2), (B, 3), (B, 4), (B, 5), (B, 6)