7) k = 11

$$\begin{aligned} \text{Check: } 4(11) + 39 &= 7(11) + 6 \\ 44 + 39 &= 77 + 6 \\ 83 &= 83 \end{aligned}$$

8) $n = \frac{1}{3}$

$$\begin{aligned} \text{Check: } 9\left(\tfrac{1}{3}\right) &= -6\left(\tfrac{1}{3}\right) + 5 \\ 3 &= -2 + 5 \\ 3 &= 3 \end{aligned}$$

9) y = –1

$$\begin{aligned} \text{Check: } 14(-1) + 5 &= 8(-1) - 1 \\ -14 + 5 &= -8 - 1 \\ -9 &= -9 \end{aligned}$$

10) p = 3

$$\begin{aligned} \text{Check: } 46 - 8(3) &= 19 + 3 \\ 46 - 24 &= 22 \\ 22 &= 22 \end{aligned}$$

11) $m = \frac{1}{2}$

$$\begin{aligned} \text{Check: } 7 - \tfrac{1}{2} &= 8 - 3\left(\tfrac{1}{2}\right) \\ 6\tfrac{1}{2} &= 8 - \tfrac{3}{2} \\ 6\tfrac{1}{2} &= 6\tfrac{1}{2} \end{aligned}$$

12) t = –2

$$\begin{aligned} \text{Check: } 1.55(-2) - 2.85 &= 8.4(-2) + 10.85 \\ -3.1 - 2.85 &= -16.8 + 10.85 \\ -5.95 &= -5.95 \end{aligned}$$

13) $d = -\frac{1}{2}$

$$\begin{aligned} \text{Check: } 3\left(-\tfrac{1}{2}\right) + 4\left(-\tfrac{1}{2}\right) + 5 &= 6\left(-\tfrac{1}{2}\right) + 7\left(-\tfrac{1}{2}\right) + 8 \\ -\tfrac{3}{2} - \tfrac{4}{2} + 5 &= -3 - \tfrac{7}{2} + 8 \\ \tfrac{3}{2} &= \tfrac{3}{2} \end{aligned}$$

14) x = –1

$$\begin{aligned} \text{Check: } 4(-1 - 4) &= 5(-1 - 3) \\ 4(-5) &= 5(-4) \\ -20 &= -20 \end{aligned}$$

15) x = about 8.15 years after 2000 (late Feb, 2008)

18) x = 1

19a) 53.84 – .32x

19b) 48.17 – .18x

19c) about 40 years

20) 12 units

4-4: 7-15, 18, 19abc, 20, 21abc, 23, 25, 26, 28abc
4-5: 2abcd, 3abcd

21a)

Hours	Chris's Distance (mi)	Lance's Distance (mi)
0	24	0
1	33	13
2	42	26
3	51	39
4	60	52
5	69	65
6	78	78

21b) 6 hours

21c) x is time for Lance to catch up. 13x = 9x + 24; x = 6 hours

23) y = d

25) c > 6

26) 8 rides

28a) 18(–x + 3)

28b) (3 – x)18

28c) 54 – 18x

2a) Chitalpa

2b) Willow

2c)

Let t be the number of years since the trees were planted. The willow is taller when $6 + 3.5t > 13 + 2t$.

2d) $t > \frac{14}{3}$

3a) $m < -\frac{10}{3}$

3b) $m < -\frac{10}{3}$

3c) Yes, the solutions are the same regardless of how the sentence is solved.

3d)

In Part a, the second step is to subtract 14 from both sides, and the third step is to divide both sides by 3. In Part b, the second step is to subtract 4 from both sides, and the third step is to divide both sides by –3.

4-4: 7-15, 18, 19abc, 20, 21abc, 23, 25, 26, 28abc
4-5: 2abcd, 3abcd