Exercise 8F

1 **a** $x = 1, y = 1$ **b** $x = 2, y = 1$ **c** $c = 1, d = 1$
d $x = 3, y = 1$ **e** $x = 3, y = 5$ **f** $a = 8, b = 2$

2 **a** $x = 1, y = 1$ **b** $x = 1, y = 1$ **c** $x = 1, y = 3$
d $a = 1, b = 1$ **e** $x = 4, y = 1$ **f** $m = 5, g = ^{-}2$

3 $x = 7, y = 8$

4 **a** $6x + 3y = 60$ (result of [1] – [2]) or $^{-}6x - 3y = ^{-}60$ (result of [2] – [1])
b $x = 5, y = 10$

5 When the coefficients of the variable you are eliminating are the same sign, you subtract; when the coefficients of the variable you are eliminating are the opposite sign, you add.

6 Small 250 ml, large 400 ml

7 Both are about the same level of difficulty, with adding being just slightly easier.

8 In Greg's method, all the values end up positive for the resulting equation.

9 12 and 7

Exercise 8G

1 **a** $x = 4, y = 1$ **b** $x = 1, y = 1$
c $x = 3.8, y = 1.6$ **d** $x = 2, y = 2$

2 **a** $x = 1, y = 1$ **b** $x = 1, y = 1$ **c** $x = 5, y = 2$
d $x = 1, y = 2$ **e** $x = 1, y = ^{-}1$ **f** $x = 2, y = 2$
g $x = 0.5, y = 1.5$

3, 4 Students' own answers

5 12 children and 4 sheep

6 15 bottles of still and 8 bottles of sparkling

Exercise 8H

1 **a** $x=4, y=1$ **b** $x=1, y=1$ **c** $x=1, y=^{-}1$
d $x=1, y=3$

2 **a** $x=2, y=1$ **b** $x=3, y=3$

3 **a-d** Students' own answers

Consolidation

Exercise 8

1 **a** $x=15$ **b** $x=12$ **c** $x=13$ **d** $x=4$
e $x=5$ **f** $x=40$ **g** $x=12$

2 **a** $\frac{266}{x+10}=7$ is correct **b** $x=28$

3 **a** $x<2$ **b** $x>4$ **c** $x<12$ **d** $x<7$
e $x\geq 3$ **f** $x<3$ **g** $x>0.5$ **h** $x\leq 6$
i $x<2$

4 **a** $x=7, y=3$ **b** $x=2.5, y=^{-}3.5$
c $x=8, y=3$ **d** $x=1, y=0.5$
e $x=1, y=^{-}1$ **f** $x=1, y=1$

5 **a** $x\geq 11$ **b** $x<12$ **c** $x<4$ **d** $x>4$
e $f<2.5$ **f** $y\leq 2$ **g** $t>4$

6 **a** $80w+150\leq 500$ **b** 4 **c** \$30

7 **a** $x=9, y=2$ **b** $r=6, t=^{-}1$

8 $e=23.5, n=18$

9 **a** \$30 **b** \$20

10 a 1 **b** $\frac{3}{2}$ **c** $\frac{4}{5}$ **d** $-\frac{3}{5}$ **e** $-\frac{1}{2}$

11

Not a linear graph	A linear graph with a positive gradient	A linear graph with a negative gradient
$7y \times 3x = ^-2$	$7y - 3x - 2 = 0$	$7y + 3x = 2$

12 $b = 17$, $a = 15$, so the cost of 7 bananas and 8 apples = \$2.39

13 a $y = 2x + 3$ **b** $y = ^-x + 5$ **c** $y = 3x - 6$

Check out

1 a 2 **b** 3 **c** 11

2 a $x < 3$ **b** $x > 4$ **c** $x \leq 0.5$ **d** $x \geq 3$

3 a $\frac{4}{3}$ **b** $\frac{^-3}{2}$ **c** 3

4 a $y = \frac{3}{2}x - 1$ **b** $y = x + 1$

5 a $x = 2, y = 1$ **b** $x = 3, y = 1$
c $x = ^-1, y = 2$ **d** $x = ^-18, y = ^-15$

6 a $x = 5, y = 1$ **b** $m = 9, p = ^-3$