

8A

1 a $x = 4$ b $s = 7$ c $x = 14$ d $x = 3$

e $t = 4$ f $t = 4$

2 a $x = 10$ b $t = -30$ c $x = 14$ d $x = -40$

e $x = -20$ f $x = 1\frac{1}{5}$

3 a $x = 6$ b $x = 4$ c $d = 7$ d $r = 2$

e $s = 3$ f $x = -2$

4 a $x = 4$ b $x = 25$ c $x = 98$ d $x = 21$

e $x = -16$ f $x = -14$

5 a $x = 2$ b $a = 8$ c $t = -3$ d $d = 4$

e $p = 3$ f $x = -3\frac{1}{2}$

6 a $x = -3$ b $z = 3$ c $p = -\frac{2}{3}$ d $x = 4$

e $z = -11$ f $e = -3$

7 a $d = -8$ b $y = 1\frac{1}{2}$ c $f = -3$ d $x = -1\frac{1}{2}$

e $a = -18$ f $k = -7$

8 a $x + 7$ **b** $2x + 7 = 43$

c $x = 18$, Gracie is 18 years old and Sheena is 25 years old

9 a $(2x - 5) + (3x + 2) + (2x - 1) = 59$, $7x - 4 = 59$

b $x = 9$, sides 13 cm, 29 cm, 17 cm

10 a $2(2x + 5) + 2(x + 3) = 40$; $6x + 16 = 40$

b $6x = 24$; $x = 4$, sides 13 cm and 7 cm

11 a $6x = 42$ **b** $x = 7$, length is 7 cm

12 a $12x = 24$ **b** $x = 2$, length is 6 cm

13 a $x + 2x + 1 + 3x + 2 = 39$; $6x + 3 = 39$

b $x = 6$, so 6 yellow, 13 green and 20 black

14 $2p + p + 7 = 97$, $p = 30$, so a pencil costs \$0.30,
an eraser costs \$0.37

15 $2c + 3(c + 5) = 5c + 15 = 95$; $c = 16$

16 $2x + 2x + 2 + 2x + 4 + 2x + 6 = 92$

$8x + 12 = 92$, $x = 10$, so numbers are 20, 22, 24 and 26

17 27, 28, 29, 30, 31

8B

1 a 2 **b** 5 **c** 6 **d** 5

2 a 1 **b** 3 **c** 12 **d** 9

3 $\frac{195}{x + 8} = 13$; $x = 7$

4 a Equation i **b** 20