Solve two-step equations

1 Use the bar models to help you solve the equations.

a)

20			
y	y	y	8

$3y + 8 = 20$

$y =$ 4

b)

2			
y	y	y	8

$3y + 8 = 2$

$y =$ −2

Which bar model do you prefer? Talk about it with a partner.

2 Dexter is solving an equation.

$2n + 9 = 5$

$2n = 9 - 5$

$2n = 4$

$n = 2$

$2n + 9 = 5$

$2n = 5 - 9$

$2n = -4$

$n = -2$

What mistake has Dexter made?

Write the correct solution next to Dexter's workings.

3 Solve the equations.

a) $4a + 20 = 8$

$a =$ −3

b) $3c + 23 = 8$

$c =$ −5

c) $9y + 10 = -8$

$y =$ −2

d) $15 + 7b = 8$

$b =$ −1

e) $0 = 8 + 2d$

$d =$ −4

f) $2h + 12 = -5$

$h =$ −8·5

4 Solve the equations.

a) $2y - 4 = 6$

$y =$ 5

b) $2y - 4 = -6$

$y =$ −1

c) $2y - 6 = 4$

$y =$ 5

d) $2y - 6 = -4$

$y =$ 1

Discuss your answers with a partner.

5 Solve the equations.

a) $-5m + 40 = 10$

$m =$ 6

b) $1 - 3g = 10$

$g =$ -3

c) $3 = 15 - 10k$

$k =$ 1·2

d) $13 = 7 - 4p$

$p =$ -1·5

6 Solve the equations.

a) $\frac{g}{2} + 7 = 12$

$g =$ 10

b) $\frac{g}{2} + 12 = 7$

$g =$ -10

c) $12 + \frac{g}{2} = 7$

$g =$ -10

d) $12 = \frac{g}{2} - 7$

$g =$ 38

e) $7 = \frac{g}{2} - 12$

$g =$ 38

f) $12 - \frac{g}{2} = 7$

$g =$ 10

7 Solve the equations.

a) $\frac{x}{5} + 1 = 3$

$x =$ 10

b) $\frac{x + 1}{5} = 3$

$x =$ 14

What is the same and what is different about the two equations?

8 The value of x in this equation is 7

Work out possible missing numbers for each equation.

e.g -2 $x +$ 15 $= 1$

2 $x -$ 13 $= 1$

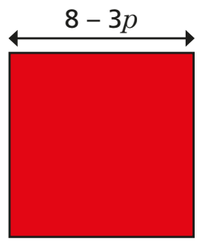
How many different answers can you find?

Various answers.

9 The diagram shows a square with sides $8 - 3p$ cm.

The perimeter of the square is 74 cm.

Calculate the value of p.



$p =$ -3·5