Solve one- and two-step equations and inequalities with brackets

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1 Jack and Whitney are solving the equation $4(x - 7) = 32$

Jack says, "I am going to expand the brackets first."

Whitney says, "I am going to divide both sides by 4 first."

a) Show that both methods give the same answer.

$4(x - 7) = 32$

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$x =$ ☐

b) Solve the equations.

$3(x + 5) = 27$

$x =$ ☐

$4(2x - 3) = 10$

$x =$ ☐

2 Rearrange the cards into the correct order to solve the equation $-2(3 - 4x) = 16$

$-2(3 - 4x) = 16$	☐
$8x = 22$	☐
$x = 2.75$	☐
$-6 + 8x = 16$	☐
$x = 22 \div 8$	☐

Can you solve the equation in a different way? Discuss with a partner.

3 Solve the equations.

a) $3(f - 2) = 3$

$f =$ ☐

b) $5(4 - 2g) = 40$

$g =$ ☐

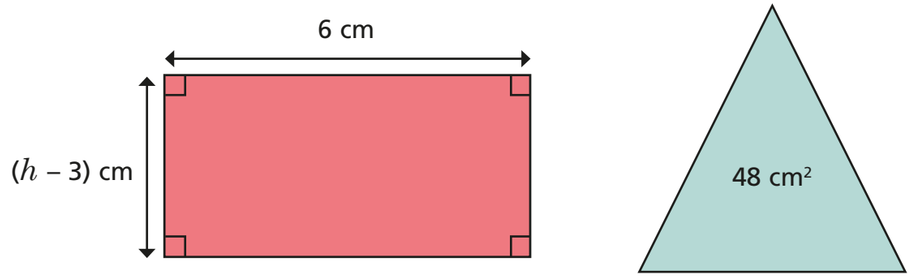
c) $-8 = -2(t - 4)$

$t =$ ☐

d) $3(c + 2) - 5 = 9$

$c =$ ☐

4 The rectangle has the same area as the triangle.



a) Form an equation and find the value of h.

$h =$ ☐

b) Work out the perimeter of the rectangle.

☐

5 Large chocolate bars are 20p more expensive than small chocolate bars.

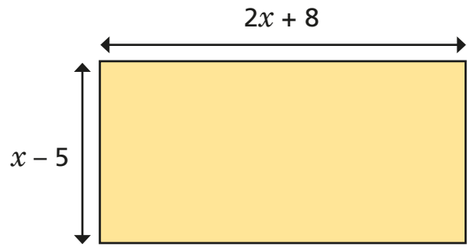
a) Dexter buys 3 small and 3 large chocolate bars for a total cost of £5.40

Form and solve an equation to find the cost of each bar.

small bar = ☐ large bar = ☐

b) How many different ways can Dexter spend exactly £5 on chocolate bars? Explain your answer.

6 The perimeter of this rectangle is 51 cm.



Work out the area of the rectangle.

area = ☐

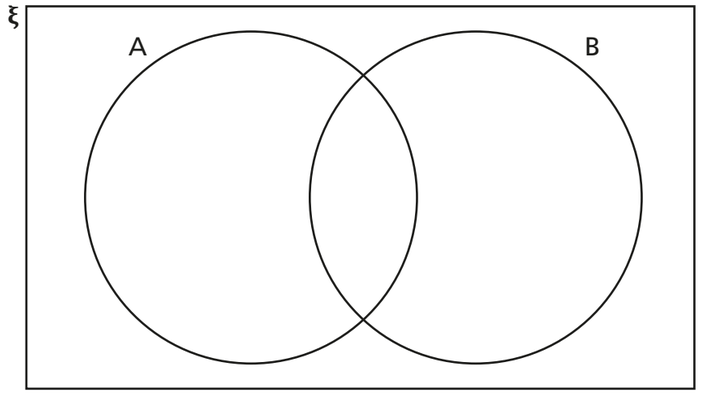
7 Solve the inequality $-6(5 - 2t) \geq -18$

8 Solve the inequalities and fill in the Venn diagram.

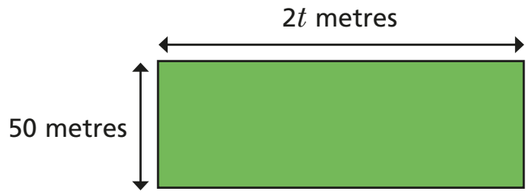
$\xi = \{x \text{ integer}; -5 \leq x \leq 5\}$

$\mathbf{A} = \{4(x + 2) < 12\}$

$\mathbf{B} = \{-3 \leq 2x + 1\}$



9 A rectangular field has these measurements.



Kim walks around the edge of the field. She walks less than 1 km.

a) Form and solve an inequality to find the possible values of t.

b) What is the smallest value that t can be?