Solving equations of the form $ax + b = c$

Core

1: Solve $5x - 2 = 13$

$x = ...$

2: Solve $4d - 3 = 17$

$x = ...$

3: Solve $2y + 1 = 7$

$x = \ldots$

4: Solve $3x + 1 = 7$

$x = \ldots$

Extension

1: Solve $3x - 1.5 = 10.5$

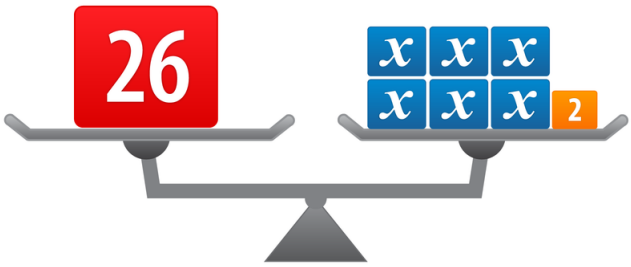
$x = ...$

2: Find the value of x in the equation below, giving your answer as a decimal.

$10x + 3 = 26$

$x = \ldots$

3: The scales shown below are balanced. What is the value of x?



4: Solve $2x - 10 = -2$

$x = \ldots$

Challenge

1: Solve $11 = 3x - 4$

$x = \ldots$

2: Solve $27 = 2 + 5x$

$x = \ldots$

3: Solve $2x + 7 = 1$

$x = \ldots$

4: The two bags on the scales contain the same number of boxes of raisins. Each box of raisins weighs the same amount. How many boxes of raisins must be in each bag for the scales below to be balanced?

Solving equations of the form $\frac{x}{a} + b = c$

Core

1: Solve $\frac{x}{2} - 4 = 5$

$x = ...$

2: Solve $\frac{x}{2} - 4 = 8$

$x = ...$

3: Solve $\frac{a}{3} + 5 = 12$

$a = ...$

4: Solve $\frac{m}{4} + 6 = 14$

$m = ...$

Extension

1: Solve $\frac{h}{5} - 4 = 12$

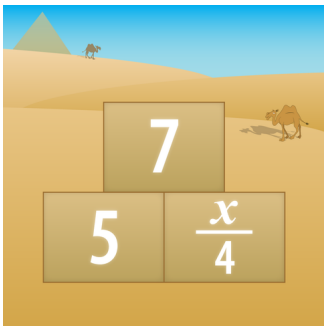
$h = ...$

2: What is the value of p in this equation? $\frac{p}{6} + 8 = 19$

3: Solve $18 = \frac{a}{3} - 12$

$a = ...$

4: In this number pyramid, the top brick is the sum of the two bricks below it. What is the value of x?



5: Solve $\frac{x}{2} + 4 = 2$

$x = \ldots$

Challenge

1: Solve $\frac{u}{3} - 13 = -2$

$u = \ldots$

2: Solve the following equation to find the value of k.
$\frac{k}{10} + 7 = 16.5$

3: Solve $\frac{b}{3} + 15 = -8$
$b = \ldots$

4: Solve $\frac{x-2}{2} = 6$

$x = \ldots$

5: The image below shows a set of scales. Work out the value of x that makes the scales balance. Write your working neatly and explain each step.