GCSE Maths: Equations and the balance idea (Foundation): worksheet

GCSE Maths - Linear Equations - Foundation - Lesson 9.1

Name: _____ Date: _____ Score: _____

16 questions. Write your answers in the spaces. Answers and step-by-step help are free at **websink.site/gcse/maths/ch09-linear-equations/foundation/equations-and-the-balance-idea/**

Exercise 9A Equations and one-step equations Non-calculator

1 Write down whether each of these is an **expression** or an **equation**.

(a) $4x + 1$

Answer:

(b) $4x + 1 = 13$

Answer:

(c) $7 - x$

Answer:

(d) $\frac{x}{5} = 2$

Answer:

2 Solve these equations. Each one needs you to **subtract**.

(a) $x + 3 = 10$

Answer:

(b) $x + 8 = 15$

Answer:

(c) $x + 6 = 9$

Answer:

(d) $x + 15 = 40$

Answer:

(e) $7 + x = 12$

Answer:

(f) $x + 25 = 61$

Answer:

3 Solve these equations. Each one needs you to **add**.

(a) $x - 2 = 7$

Answer:

(b) $x - 5 = 9$

Answer:

(c) $x - 10 = 4$

Answer:

(d) $x - 1 = 20$

Answer:

(e) $x - 8 = 8$

Answer:

(f) $x - 3 = 0$

Answer:

4 Solve these equations. Each one needs you to **divide**.

(a) $2x = 14$

Answer:

(b) $5x = 20$

Answer:

(c) $3x = 27$

Answer:

(d) $10x = 90$

Answer:

(e) $4x = 36$

Answer:

(f) $7x = 56$

Answer:

5 Solve these equations. Each one needs you to **multiply**.

(a) $\frac{x}{2} = 5$

Answer:

(b) $\frac{x}{3} = 4$

Answer:

(c) $\frac{x}{5} = 6$

Answer:

(d) $\frac{x}{10} = 3$

Answer:

(e) $\frac{x}{4} = 8$

Answer:

(f) $\frac{x}{7} = 7$

Answer:

6 Write down the operation you do to **both sides** first to get x on its own. You do not need to finish solving.

(a) $x + 9 = 14$

Answer:

(b) $x - 6 = 10$

Answer:

(c) $4x = 20$

Answer:

(d) $\frac{x}{5} = 3$

Answer:

7 Solve these equations, using what you know about inverse operations.

(a) $x + 47 = 91$

Answer:

(b) $8x = 96$

Answer:

(c) $x - 29 = 31$

Answer:

(d) $\frac{x}{6} = 12$

Answer:

(e) $x + 148 = 372$

Answer:

(f) $12x = 180$

Answer:

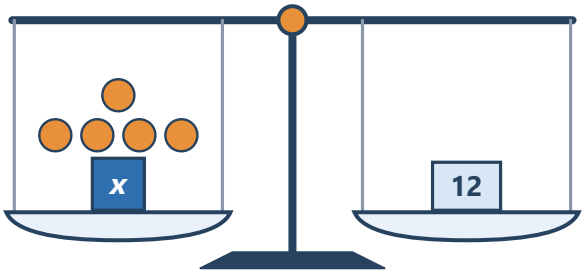
8 Ravi thinks of a number. He adds 9 and gets 25. What number did Ravi think of?

Answer:

9 A box of 8 identical chocolates costs £6. Work out the cost of one chocolate. Give your answer in pence.

Answer:

10 The scales balance. The box has a mass of x kg. Write down an equation and use it to find the mass of the box.



box + 5 kg = 12 kg

Answer:

11 Sam says "$x = 4$" is the solution of each equation. Substitute 4 for x to decide whether he is right. Write **yes** or **no**.

(a) $x + 5 = 9$

Answer:

(b) $3x = 15$

Answer:

(c) $x - 2 = 3$

Answer:

(d) $\frac{x}{2} = 2$

Answer:

12 Sam solves $x + 6 = 15$ and writes $x = 21$. Explain his mistake and work out the correct solution.

Answer:

13 Write an equation for each sentence, then solve it to find the number.

(a) A number plus 7 is 19

Answer:

(b) A number minus 6 is 11

Answer:

(c) 5 times a number is 40

Answer:

(d) A number divided by 4 is 9

Answer:

14 The equations $x + a = 12$ and $3x = 18$ have the same solution. Work out the value of a.

Answer:

15 Complete the solutions. Use the balance idea to find x.

(a) $x + 1 = 4$

Answer:

(b) $x + 2 = 5$

Answer:

(c) $2x = 6$

Answer:

(d) $x - 1 = 3$

Answer:

16 There are 5 identical bags of sweets. In total there are 40 sweets. How many sweets are in one bag?

Answer:

© Websink Prep UK. Free for classroom and home use; please do not resell. websink.site