

GCSE Maths: Factorising: common factors (Foundation): worksheet

GCSE Maths - Algebra Basics - Foundation - Lesson 7.6

Name: _____

Date: _____

Score: _____

12 questions. Write your answers in the spaces. Answers and step-by-step help are free at websink.site/gcse/maths/ch07-algebra-basics/foundation/factorising-common-factors/

Exercise 7F Factorising with common factors

Non-calculator

1 Factorise each expression.

(a) $4x + 8$

Answer: _____

(b) $6y - 9$

Answer: _____

(c) $10 + 15a$

Answer: _____

(d) $12 - 8b$

Answer: _____

(e) $14m + 21$

Answer: _____

(f) $9p - 27$

Answer: _____

2 Factorise each expression.

(a) $x^2 + 3x$

Answer: _____

(b) $y^2 - 4y$

Answer: _____

(c) $a^2 + a$

Answer: _____

(d) $5m^2 - m$

Answer: _____

3 Factorise each expression fully.

(a) $6x^2 + 9x$

Answer: _____

(b) $10a^2 - 15a$

Answer: _____

(c) $4y^2 + 12y$

Answer:

(d) $8m^2 - 2m$

Answer:

4 Complete each factorisation.

(a) $5x + 20 = 5(x + ?)$

Answer:

(b) $8y - 12 = 4(? - 3)$

Answer:

(c) $x^2 + 6x = x(? + 6)$

Answer:

(d) $3a^2 + 12a = 3a(a + ?)$

Answer:

5 Factorise each expression fully.

(a) $6ab + 9a$

Answer:

(b) $4pq - 6q$

Answer:

(c) $12xy + 8y$

Answer:

(d) $5mn - 10n$

Answer:

6 Factorise each expression fully.

(a) $4x + 8y + 12$

Answer:

(b) $10a - 15b + 5$

Answer:

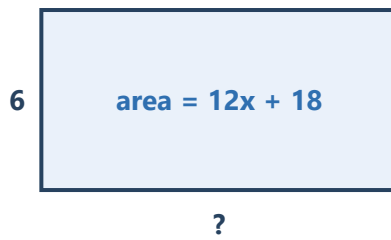
(c) $3m^2 + 6m + 9$

Answer:

7 Eve factorises $6x + 12$ and writes $2(3x + 6)$. Is this fully factorised? Explain, and write the correct answer.

Answer:

8 The area of a rectangle is $(12x + 18) \text{ cm}^2$. The width of the rectangle is 6 cm. Write an expression for the length.



Answer:

- 9** Mia buys 8 pens at x pence each and 8 rulers at y pence each. The total cost is $(8x + 8y)$ pence. Write this total in a factorised form, and explain what the factorised form tells you.

Answer:

- 10** Dan factorises $6x + 9$ as $3(2x + 9)$. Show that he is wrong by expanding his answer, and write the correct answer.

Answer:

- 11** The area of a rectangle is $(6x^2 + 9x) \text{ cm}^2$. Its length is $3x \text{ cm}$. Find the width and the perimeter of the rectangle, in terms of x .

(a) the width

Answer:

(b) the perimeter

Answer:

- 12** $24x + 36$ can be written in the form $a(bx + c)$, where a , b and c are whole numbers and a is bigger than 1. Find all the ways of doing this. Which one is fully factorised?

Answer: