

GCSE Maths: Expanding double brackets (Higher): worksheet

GCSE Maths - Algebra Basics - Higher - Lesson 7.5

Name: _____

Date: _____

Score: _____

18 questions. Write your answers in the spaces. Answers and step-by-step help are free at websink.site/gcse/maths/ch07-algebra-basics/higher/expanding-double-brackets/

Exercise 7E Expanding double brackets Non-calculator

1 Expand and simplify.

(a) $(x + 2)(x + 3)$

Answer: _____

(b) $(x + 5)(x + 1)$

Answer: _____

(c) $(x + 4)(x + 6)$

Answer: _____

(d) $(y + 7)(y + 2)$

Answer: _____

(e) $(a + 3)(a + 8)$

Answer: _____

2 Expand and simplify.

(a) $(x - 2)(x + 5)$

Answer: _____

(b) $(x + 3)(x - 4)$

Answer: _____

(c) $(x - 1)(x - 6)$

Answer: _____

(d) $(a - 5)(a - 2)$

Answer: _____

(e) $(y - 3)(y + 8)$

Answer: _____

3 Expand and simplify.

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

Answer: _____

(b) $(x - 5)^2$

Answer: _____

(c) $(x + 10)^2$

Answer: _____

(d) $(y - 1)^2$

Answer:

4 Expand and simplify.

(a) $(2x + 1)(x + 3)$

Answer:

(b) $(3x - 2)(x + 4)$

Answer:

(c) $(2x + 3)(2x + 5)$

Answer:

(d) $(4x - 1)(x - 2)$

Answer:

5 Expand and simplify. What do you notice about your answers?

(a) $(x + 3)(x - 3)$

Answer:

(b) $(a + 8)(a - 8)$

Answer:

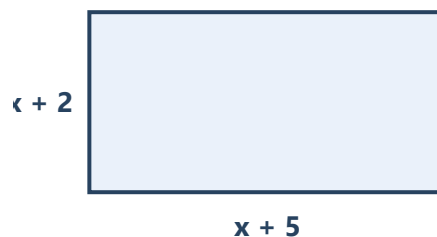
(c) $(2x + 5)(2x - 5)$

Answer:

(d) $(y - 7)(y + 7)$

Answer:

6 The rectangle has length $(x + 5)$ cm and width $(x + 2)$ cm. Show that its area is $(x^2 + 7x + 10)$ cm².



Answer:

7 A square has sides of length $(x + 3)$ cm. Write and simplify an expression for (a) its area (b) its perimeter.

(a) the area

Answer:

(b) the perimeter

Answer:

8 A rectangle has length $(x + 7)$ cm and width $(x - 2)$ cm. (a) Expand and simplify $(x + 7)(x - 2)$. (b) Use your answer to find the area of the rectangle when $x = 5$.

(a) Expand and simplify $(x + 7)(x - 2)$.

Answer:

(b) Find the area when $x = 5$.

Answer:

9 Ben writes $(x + 4)^2 = x^2 + 16$. Explain his mistake and write the correct expansion.

Answer:

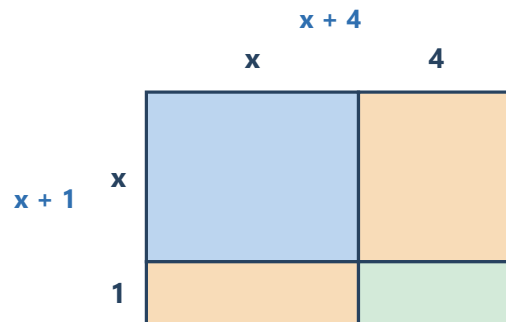
10 Show that $(x + 3)(x + 4) - (x + 1)(x + 6) = 6$.

Answer:

11 Explain why $(x + 5)^2$ is not equal to $x^2 + 25$. Use $x = 1$ in your explanation.

Answer:

12 The diagram shows a rectangle that is $(x + 4)$ long and $(x + 1)$ wide, cut into four parts. Work out the area of each part, then write the expanded and simplified expression for the whole area.



Answer:

13 Expand and simplify.

(a) $(x + 1)(x + 2)(x + 3)$

Answer:

(b) $(x - 1)(x + 2)(x + 4)$

Answer:

(c) $(x + 2)(x + 2)(x - 1)$

Answer:

(d) $(2x + 1)(x + 3)(x - 2)$

Answer:

14 Expand and simplify.

(a) $(x + 2)(x^2 + 3x - 1)$

Answer:

(b) $(2x - 1)(x^2 - x + 4)$

Answer:

(c) $(x - 3)(x^2 + 3x + 9)$

Answer:

15 Expand and simplify.

(a) $(x + 2y)(x - 3y)$

Answer:

(b) $(2a + b)^2$

Answer: _____

(c) $(3a - 2b)^2$

Answer: _____

16 Expand and simplify $(x + 3)^3$.

Answer: _____

17 Expand $(x + a)(x + b)$ and write the middle term and the last term in terms of a and b .

Answer: _____

18 Show that $(x + 5)(x - 5) - (x + 3)(x - 3) = -16$.

Answer: _____