GCSE Maths Algebra Basics (Foundation): check-up and exam-style questions: worksheet

GCSE Maths - Algebra Basics - Foundation - Test yourself

Name: _____ Date: _____ Score: _____

22 questions. Write your answers in the spaces. Answers and step-by-step help are free at **websink.site/gcse/maths/ch07-algebra-basics/foundation/check-up-and-exam-style-questions/**

Exercise 7Z Check-up (non-calculator) Non-calculator

1 Simplify $5a + 3b - 2a + 4b - 6 + 9$.

Answer:

2 Write each using algebraic notation: (a) $a \times b \times b \times 5$ (b) $y \div 4$.

(a) $a \times b \times b \times 5$

Answer:

(b) $y \div 4$

Answer:

3 Simplify (a) $3x^2 \times 5x^4$ (b) $12a^5 \div 3a^2$ (c) $(2y^3)^2$.

(a) $3x^2 \times 5x^4$

Answer:

(b) $12a^5 \div 3a^2$

Answer:

(c) $(2y^3)^2$

Answer:

4 Expand (a) $4(2x - 3)$ (b) $x(x + 6)$.

(a) $4(2x - 3)$

Answer:

(b) $x(x + 6)$

Answer:

5 Expand and simplify $3(x + 2) - 2(x - 1)$.

Answer:

6 Expand and simplify $(x + 3)(x - 5)$.

Answer:

7 Factorise fully $8x^2 + 12x$.

Answer:

8 Factorise $x^2 - 10x + 24$.

Answer:

9 Factorise (a) $x^2 - 81$ (b) $9y^2 - 16$.

(a) $x^2 - 81$

Answer:

(b) $9y^2 - 16$

Answer:

10 Is $2(x + 4) = 2x + 8$ an equation or an identity? Give a reason.

Answer:

Exercise 7X Exam-style questions Non-calculator

1 Simplify $6a + 3b - 2a + 5b$. [2 marks]

Answer:

2 Expand and simplify $4(x + 3) - 2(x - 1)$. [2 marks]

Answer:

3 Chris buys 4 pens costing p pence each and 3 books costing b pence each. (a) Write an expression for the total cost, in pence. (b) Chris pays with a £10 note. Write an expression for his change, in pence. [3 marks]

(a) Write an expression for the total cost, in pence.

Answer:

(b) Write an expression for his change, in pence.

Answer:

4 Factorise fully $6x^2 + 9x$. [2 marks]

Answer:

5 Expand and simplify $(x + 5)(x - 3)$. [2 marks]

Answer:

6 Factorise $x^2 - 7x + 12$. [2 marks]

Answer:

7 Simplify (a) $p^3 \times p^4$ (b) $y^8 \div y^2$ (c) $(m^2)^5$. [3 marks]

(a) $p^3 \times p^4$

Answer:

(b) $y^8 \div y^2$

Answer:

(c) $(m^2)^5$

Answer:

8 Factorise $25x^2 - 4$. [2 marks]

Answer:

9 Show that $(x + 4)(x - 4) + 16 \equiv x^2$. [3 marks]

Answer:

10 For each statement write “equation” or “identity”. (1 mark each) [3 marks]

(a) $4x + 1 = 21$

Answer:

(b) $3(x + 1) = 3x + 3$

Answer:

(c) $(x + 2)(x - 2) = x^2 - 4$

Answer:

11 Prove that the sum of any four consecutive odd numbers is a multiple of 8. [3 marks]

Answer:

12 The area of a rectangle is $(x^2 + 5x + 6)$ cm^2. The width of the rectangle is $(x + 2)$ cm. Find an expression for the length of the rectangle. [2 marks]

Answer:

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