Algebraic expressions

Year 8 | Key Stage 3 | 12 questions, 32 marks

KS3 Maths topic practice

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Name: _____ **Date:** _____ **Score:** _____ **/ 32**

1 a. Simplify $5 \times 2m$

b. Simplify $n \times n \times n \times n$

c. Simplify $3c \times 4d$

(3 marks)

Answer _____

2 Here are four pieces of algebra.

A: $3x + 2 = 11$ B: $A = lw$ C: $4y - 7$ D: $2(x + 3) \equiv 2x + 6$

Write down which one is

a. an expression

b. an equation

c. a formula

d. an identity

(2 marks)

Answer _____

3 Simplify $6x + 3y - 2x + 5y$

(2 marks)

Answer _____

4 Simplify

a. $5a^2 + 3a - 2a^2 + 4a - 9$

b. $4xy - 7 + 2yx + 10$

(2 marks)

Answer _____

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5 a. Expand $4(2x - 5)$

b. Factorise $6y + 15$

(2 marks)

Answer _____

6 a. Expand and simplify $3(2x + 5) - 2(x - 4)$

b. Expand $x(x + 7)$

(3 marks)

Answer _____

7 a. Factorise $5x + 20$

b. Factorise $x^2 - 9x$

(2 marks)

Answer _____

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8 The diagram shows a rectangle with sides $(x + 4)$ and $(x + 3)$.

It is split into four smaller rectangles.

a. Write down an expression for the area of each of the four smaller rectangles.

b. Hence expand and simplify $(x + 4)(x + 3)$

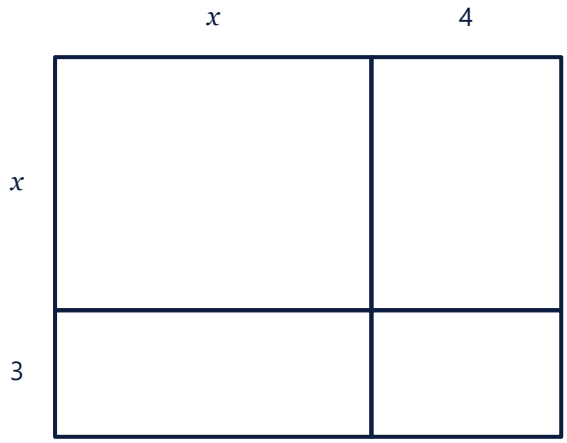

Diagram NOT accurately drawn

(3 marks)

Answer _____

9 Expand and simplify $(x - 3)(x + 8)$

(2 marks)

Answer _____

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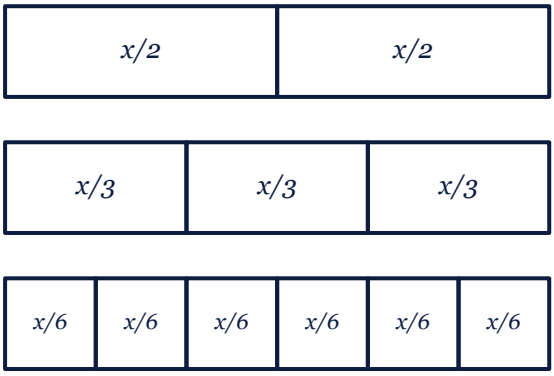
10 Each bar in the diagram has length x.

The top bar is split into halves, the middle bar into thirds and the bottom bar into sixths.

a. Use the diagram to write $\frac{x}{2}$ and $\frac{x}{3}$ in sixths.

b. Hence simplify $\frac{x}{2} + \frac{x}{3}$

c. Simplify $\frac{x}{2} - \frac{x}{3}$



(3 marks)

Answer _____

11 Simplify fully

a. $\frac{6x}{9}$

b. $\frac{x}{3} + \frac{x}{4}$

c. $\frac{5y}{6} - \frac{y}{3}$

d. $\frac{2a}{3} \times \frac{9}{4a}$

(4 marks)

Answer _____

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12 a. Expand and simplify $(y - 3)(y - 8)$

b. Factorise fully $4a^2b + 6ab^2$

(4 marks)

Answer _____

End of questions | Total 32 marks

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