



2.7D Writing an Expression: Fluency and Exam Drill

EDEXCEL Edexcel 1MA1 · Calculator allowed · about 40 minutes

Total Marks

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

- 1 Write down an expression for 6 more than a number n .

(Total for Question 1 is 1 mark)

- 2 Write an expression for the product of 4 and a number p .

(Total for Question 2 is 1 mark)

- 3 Write an expression for a number a decreased by 7.

(Total for Question 3 is 1 mark)

- 4 Write an expression for twice a number t then add 9.

(Total for Question 4 is 1 mark)

- 5 Write an expression for three times a number k , divided by 5.

(Total for Question 5 is 1 mark)

- 6 Write an expression for y squared plus 4.

(Total for Question 6 is 1 mark)

- 7 A rectangle has length $(2x + 3)$ cm and width $(x - 1)$ cm. Write an expression for the perimeter of the rectangle. Simplify your answer.

(Total for Question 7 is 2 marks)

- 8 An equilateral triangle has side length $(s + 5)$ cm. Write an expression for its perimeter and simplify.

(Total for Question 8 is 2 marks)

- 9 A delivery service charges a fixed fee of 1.20 pounds plus 0.35 pounds for each item ordered. Write an expression for the total cost if m items are ordered.

(Total for Question 9 is 2 marks)

- 10 The price of a jumper is p pounds. During a sale the price is reduced by 25%. Write an expression for the sale price in terms of p . Give the answer as a fraction in simplest form.

(Total for Question 10 is 1 mark)

- 11 Amelia has a rectangular piece of fabric of length $(3x + 2)$ cm and width $(x + 4)$ cm. She trims a 1 cm border all around the fabric. Work out an expression, in terms of x , for the perimeter of the trimmed fabric. Simplify your answer.

(Total for Question 11 is 3 marks)

- 12** A rectangle has width w cm. Its length is twice its width. Write an expression for the perimeter of the rectangle in terms of w and simplify.

(Total for Question 12 is 2 marks)

- 13** A row of n tiles is laid end to end. Each tile is x cm long. There is a 2 cm gap between each pair of adjacent tiles. Write an expression for the total length, in cm, of the row of n tiles. Simplify your answer.

(Total for Question 13 is 3 marks)

- 14** A company charges a fixed setup fee of 12 pounds plus 4 pounds for every metre of cable and 1.50 pounds for each connector. They supply c connectors and m metres of cable. (a) Write an expression for the total cost in terms of m and c . (b) If they supply three times as many connectors as metres of cable, express the total cost in terms of m and simplify. Give your final answer in fractional form where appropriate.

(a) (a) Write an expression for the total cost in terms of m and c . (1)

(b) (b) Given $c = 3m$, write the total cost in terms of m and simplify. Give final answer as a fraction where appropriate. (2)

(Total for Question 14 is 3 marks)

Mark scheme · 2.7D Writing an Expression: Fluency and Exam Drill

Question 1

- **B1** $n + 6$ cao
- **Answer:** $n + 6$

Question 2

- **B1** $4p$ cao
- **Answer:** $4p$

Question 3

- **B1** $a - 7$ cao
- **Answer:** $a - 7$

Question 4

- **B1** $2t + 9$ cao
- **Answer:** $2t + 9$

Question 5

- **B1** $3k/5$ cao
- **Answer:** $3k/5$

Question 6

- **B1** $y^2 + 4$ cao
- **Answer:** $y^2 + 4$

Question 7

- **M1** substitute into perimeter formula $P = 2(\text{length} + \text{width})$, e.g. $2[(2x + 3) + (x - 1)]$ or equivalent
- **A1** $6x + 4$ cao
- **Answer:** $6x + 4$

Question 8

- **M1** recognise perimeter = 3 times side, $3(s + 5)$ or equivalent
- **A1** $3s + 15$ cao
- **Answer:** $3s + 15$

Question 9

- **M1** identify fixed fee + variable cost, $1.20 + 0.35m$ or equivalent
- **A1** $1.20 + 0.35m$ cao
- **Answer:** $1.20 + 0.35m$

Question 10

- **B1** $3/4 p$ or $(3/4)p$ cao
- **Answer:** $3/4 p$

Question 11

- **M1** subtract 2 cm from length and width to account for 1 cm border each side, $L = (3x + 2) - 2$, $W = (x + 4) - 2$
- **M1** use perimeter = $2(L + W)$ with substituted expressions, e.g. $2[(3x) + (x) + 2]$
- **A1** $8x + 4$ cao
- **Answer:** $8x + 4$

Question 12

- **M1** substitute length = $2w$ into $P = 2(\text{length} + \text{width})$, e.g. $2(2w + w)$
- **A1** $6w$ cao
- **Answer: $6w$**

Question 13

- **M1** identify tile contribution nx or $n \times$
- **M1** identify gap contribution $2(n - 1)$ or equivalent
- **A1** $nx + 2n - 2$ cao
- **Answer: $nx + 2n - 2$**

Question 14

- (a) **B1** $12 + 4m + 1.50c$ cao
- (a) **Answer: $12 + 4m + 1.50c$**
- (b) **M1** substitute $c = 3m$ into $12 + 4m + 1.50c$, giving $12 + 4m + 1.50 \times 3m$
- (b) **A1** $12 + 17/2 m$ cao
- (b) **Answer: $12 + 17/2 m$**