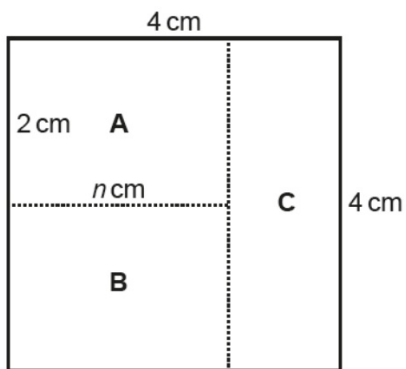


A1...Algebra Introduction and Notation

OCR

10 A square is divided into three rectangles, **A**, **B** and **C**.

Video created by W Neill



Rectangle **A** has length n cm and a width of 2 cm.
Rectangle **C** has length 4 cm.

(a) (i) Write down an algebraic expression for the width of rectangle **C**.

(a)(i) cm [1]

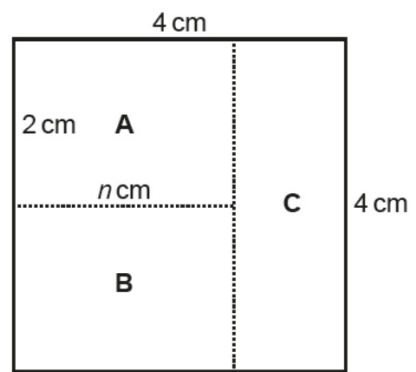
(ii) Write down an algebraic expression for the **area** of rectangle **A**.

(ii) cm^2 [1]

Video created by W Neill

(b) The three rectangles all have the **same** area.

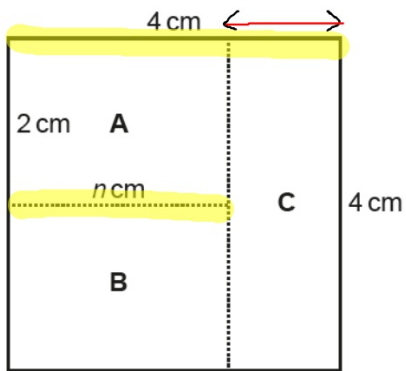
Work out the value of n .



(b) $n = \dots\dots\dots$ [3]

10 A square is divided into three rectangles, **A**, **B** and **C**.

Video created by W Neill



Rectangle **A** has length n cm and a width of 2 cm.
Rectangle **C** has length 4 cm.

(a) (i) Write down an algebraic expression for the width of rectangle **C**.

(a)(i) $4 - n$ cm [1]

(ii) Write down an algebraic expression for the **area** of rectangle **A**.

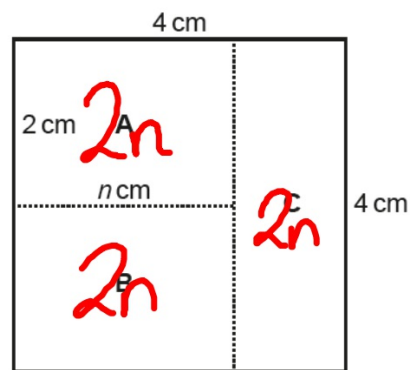
$2 \times n$
(ii) $2n$ cm² [1]

Video created by W Neill

(b) The three rectangles all have the same area.

Work out the value of n .

$$\begin{aligned} \text{Total area} &= 6n = 16 \\ n &= \frac{16}{6} \\ n &= 2\frac{4}{6} \end{aligned}$$



(b) $n = 2\frac{2}{3} \checkmark$ or 2.6 [3]

Edexcel

17 (a) Factorise $4m + 12$

Created by W Neill

.....
(1)

expression	equation	formula	identity
inequality	term	factor	multiple

(b) Choose two words from the box above to make this statement correct.

$5y$ is a in the $3x + 5y$

(2)

(Total for Question 17 is 3 marks)

17 (a) Factorise $4m + 12$

\uparrow \uparrow

$$4(m+3)$$

Created by W Neill

.....
(1)

expression	equation	formula	identity
inequality	term	factor	multiple

(b) Choose two words from the box above to make this statement correct.

$5y$ is a term in the expression $3x + 5y$

(2)

(Total for Question 17 is 3 marks)

AQA

2 Circle the expression that is four times bigger than n .

[1 mark]

Al

$n + 4$

$4n$

$\frac{n}{4}$

n^4

2 Circle the expression that is four times bigger than n .

[1 mark]

AI

$n + 4$

$4n$

$\frac{n}{4}$

n^4

Video created by W Neill

1 Circle the expression that can be written as $2y$

[1 mark]

A1

$y + y$

y^2

$2 + y$

$y \times y$

Video created by W Neill

1 Circle the expression that can be written as $2y$

[1 mark]

A1

$y + y$

y^2

$2 + y$

$y \times y$

7 e is 3 **more** than d .
 f is 5 **less** than d .

7 (a) Write an expression for e in terms of d .

[1 mark]

A1

Answer _____

- 7 e is 3 **more** than d .
 f is 5 **less** than d .

- 7 (b) Write an expression for f in terms of d .

[1 mark]

A1

Answer _____

7 e is 3 more than d .
 f is 5 less than d .

7 (c) Work out $e - f$
Simplify your answer.

A2

[2 marks]

Answer _____

- 7 e is 3 **more** than d .
 f is 5 **less** than d .

- 7 (a) Write an expression for e in terms of d .

[1 mark]

A1

Answer $d + 3$

- 7 e is 3 more than d .
 f is 5 less than d .

- 7 (b) Write an expression for f in terms of d .

[1 mark]

A1

Answer $d - 5$

- 7 e is 3 more than d .
 f is 5 less than d .

$$d - d = 0$$

- 7 (c) Work out $e - f$
Simplify your answer.

A2

[2 marks]

$$\begin{array}{l} e = d + 3 \\ f = d - 5 \end{array} \quad \begin{array}{l} e - f \\ (d + 3) - (d - 5) \\ 3 - -5 \\ 3 + 5 = 8 \end{array}$$

Answer _____

15

Amy has x beads.

A1

Billy has three more beads than Amy.

Carly has four times as many beads as Billy.

Circle the expression for the number of beads that Carly has.

[1 mark]

$4x + 3$

$3x + 4$

$4(x + 3)$

$x + 12$

15

Amy has x beads.

Billy has three more beads than Amy.

Carly has four times as many beads as Billy.

Circle the expression for the number of beads that Carly has.

[1 mark]

$4x + 3$

$3x + 4$

$4(x + 3)$

$x + 12$

x

$x + 3$

$4(x + 3) \text{ or } 4x + 12$

A1