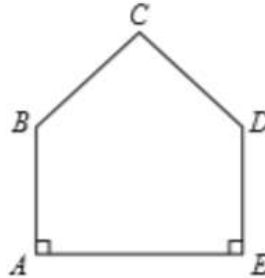


Edexcel Nov 18 P2 (5 marks)

- 17 The diagram shows a pentagon.  
 The pentagon has one line of symmetry.



$$\begin{aligned} AE &= 4x \\ AB &= 2x + 1 \\ BC &= x + 2 \end{aligned}$$

All these measurements are given in centimetres.

The perimeter of the pentagon is 18 cm.

- (a) Show that  $10x + 6 = 18$

(a) Perimeter = 18cm

$$\begin{aligned} \text{Perimeter} &= AE + AB + DE + BC + CD \\ &= 4x + 2x + 1 + 2x + 1 + x + 2 + x + 2 \\ &= 10x + 6 \end{aligned}$$

{ collect up like terms)

$AB = DE$   
 $BC = CD$

18 = 10x + 6 (shown)

(b)  $10x + 6 = 18$   
 $\quad -6 \quad -6$   
 $10x = 12 \quad \div 10$   
 $\div 10 \quad x = 1.2$

**Your turn: Use the diagram above**

**.1.**

**What if .....**

$$BC = 3x$$

$$AE = 4x - 1$$

$$DE = x + 4$$

$$\text{Perimeter} = 61\text{cm}$$

**(a) Show that  $12x + 7 = 61$**

**(b) Find the value of  $x$**

**.2.**

**What if .....**

$$CD = 8 + 7x$$

$$AE = 11x$$

$$AB = x = 0.5$$

$$\text{Perimeter} = 15.5 \text{ cm}$$

**(a) Show that  $27x + 15 = 15.5$**

**(b) Find the value of  $x$**

<b>Answers:</b> 1. $x=4.5$ 2. $x=0.5$
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