

22

$$x:y = 7:4$$

$$x+y = 88$$

Work out the value of $x-y$

[3 marks]

$$\begin{array}{l} x \quad \boxed{} \boxed{} \boxed{} \boxed{} \boxed{} \boxed{} \boxed{} \boxed{} \\ y \quad \boxed{} \boxed{} \boxed{} \boxed{} \end{array} \left. \vphantom{\begin{array}{l} x \\ y \end{array}} \right\} 88$$

$$88 \div 11 = 8$$

$$x = 56$$

$$y = 32$$

$$x-y$$

$$56 - 32 = 24$$

Answer _____

Turn over for the next question



22

$$x : y = 7 : 4$$

$$x + y = 88$$

Work out the value of $x - y$

[3 marks]

88 {

8	8	8	8	8	8	8
8	8	8	8			

 x
 y
 $x - y = 3 \times 8$

$$88 \div 11 = 8$$

Don't think students would do this
bit - thought they'd do 7×8 and 4×8
and subtract.

Answer 24

Turn over for the next question



22

$$x:y = 7:4$$

$$x+y = 88$$

(2)

Work out the value of $x-y$

[3 marks]

$$\begin{array}{r} x \\ 7 \\ 1 \end{array} \quad \begin{array}{r} y \\ 4 \\ \frac{4}{7} \end{array} \quad \sim \frac{7x}{11} + \frac{4y}{11} = 1$$

Answer _____

Turn over for the next question

$$\begin{array}{r} x \\ 7 \\ 1 \end{array} \quad \begin{array}{r} y \\ 4 \\ \frac{4}{7} \end{array}$$

$$y = \frac{4}{7}x \quad (1)$$

Sub (1) into (2)

$$x + \frac{4}{7}x = 88$$

$$\frac{11x}{7} = 88$$

$$\frac{x}{7} = 8$$

$$x = 56$$

5

Turn over ►



22

$x:y = 7:4$

$x+y = 88$

Work out the value of $x-y$

[3 marks]

$7+4=11$

$88 \div 11 = 8$

$8 \times 7 = 56$

$8 \times 4 = 32$

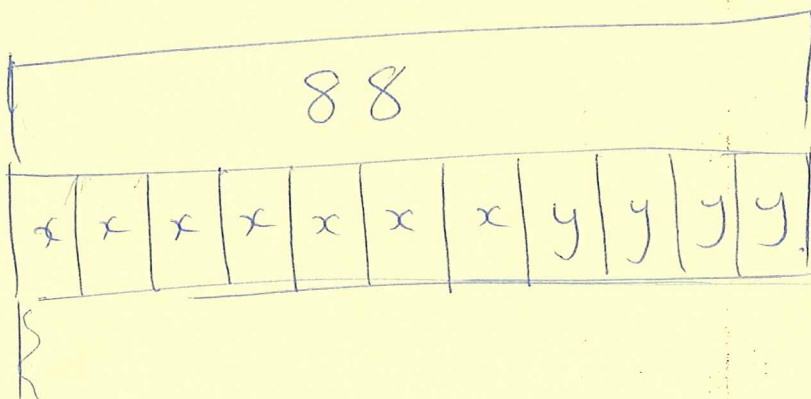
56

-32

24

Answer _____

Turn over for the next question



Turn over ►



22

$$x:y = 7:4$$

$$x+y = 88$$

Work out the value of $x-y$

[3 marks]

$$x:y$$

$$7:4$$

$$14:8$$

$$21:12$$

$$28:16$$

$$35:20$$

$$42:24$$

$$49:28$$

$$56:32$$

Answer

24

$$56+32=88$$

Turn over for the next question

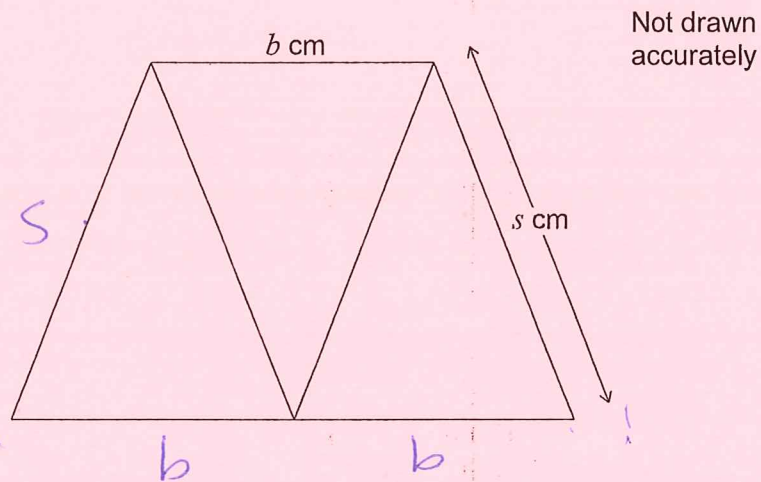
$$x=56$$

$$y=32$$

$$x-y = 56-32 = 24$$



26 (b) This diagram shows the same trapezium.



$$b : s = 2 : 3$$

Work out an expression, in terms of b , for the perimeter of the trapezium.

[2 marks]

$$\begin{array}{l} b:s \\ 2:3 \end{array}$$

$$s = \frac{3b}{2}$$

$$3b + 2s$$

$$3b + 2\left(\frac{3}{2}\right)b = 3b + 3b = 6b$$

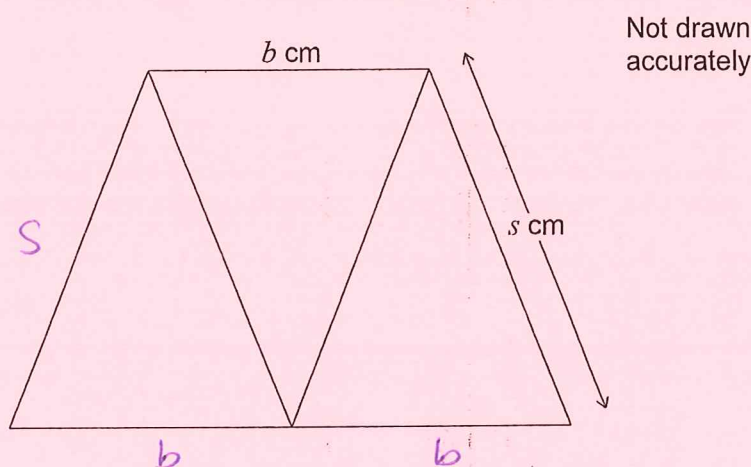
Answer 6b cm

Turn over for the next question





26 (b) This diagram shows the same trapezium.



$$b : s = 2 : 3$$

Work out an expression, in terms of b , for the perimeter of the trapezium.

[2 marks]

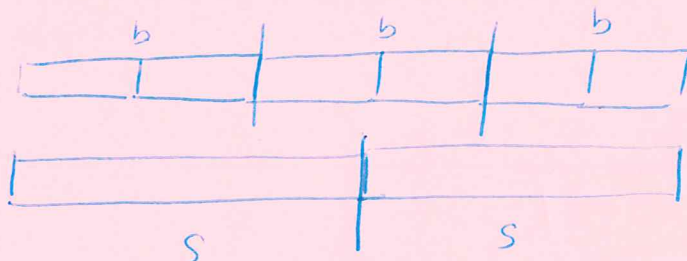
b

$$\text{Perimeter} = 3b + 2s$$

s

Answer 6b cm

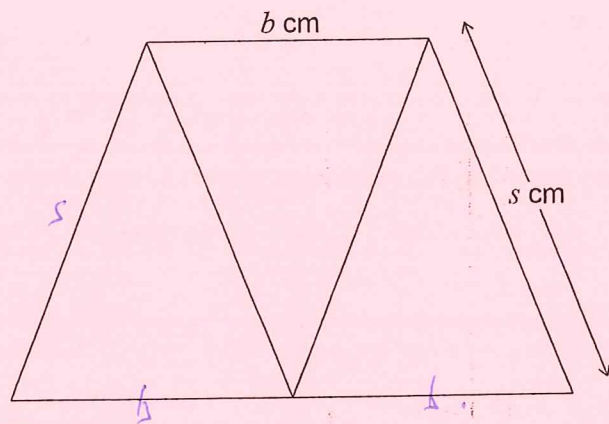
Turn over for the next question



Turn over ►



26 (b) This diagram shows the same trapezium.



$$b : s = 2 : 3$$

$$3b = 2s$$

Work out an expression, in terms of b , for the perimeter of the trapezium.

[2 marks]

$$\text{perimeter} = 3b + 2s$$

$$b = \frac{2}{3}s$$

$$s = \frac{3b}{2}$$

$$= 3b + \frac{2 \times 3b}{2}$$

Answer 6b ✓ cm

Turn over for the next question

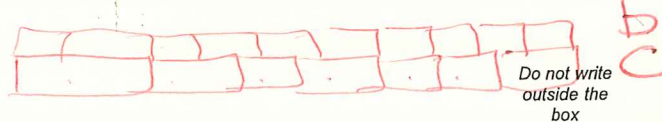


$$b:c \quad b \begin{array}{|c|c|c|c|c|} \hline & & & & \\ \hline \end{array}$$

$$7:10 \quad c \begin{array}{|c|c|c|c|c|c|c|c|} \hline & & & & & & & \\ \hline \end{array}$$

$$b = \frac{7}{10}c$$

19



Do not write
outside the
box

24

$$a:b = 9:4 \quad \text{and} \quad 10b = 7c$$

$$\frac{10}{7}b = c$$

$$\frac{b}{c} = \frac{7}{10}$$

Work out $a:c$ in its simplest form.

[3 marks]

$$a : b : c$$

$$9 : 4$$

$$7 : 10$$

$$63 : 28$$

$$28 : 40$$

$$63 : 28 : 40$$

$$a : b : c$$

$$9 : 4$$

$$10 : 7$$

$$45 : 20$$

$$20 : 14$$

$$45 : 20 : 14$$

Answer

$$63 : 40$$

Turn over for the next question



$$\frac{a}{b} = \frac{9}{4}$$

$$4a = 9b$$

$$1b = 0.7c$$

19

Do not write
outside the
box

24

$$a:b = 9:4 \quad \text{and} \quad 10b = 7c$$

$$b = 0.7c$$

Work out $a:c$ in its simplest form.

[3 marks]

$$a \quad \boxed{} \boxed{} \boxed{} \boxed{} \boxed{} \boxed{} \boxed{} \boxed{}$$

$$b \quad \boxed{} \boxed{} \boxed{} \boxed{} \boxed{}$$

$$c$$

Answer

63

40

Turn over for the next question

$\times 10$

$\times 9$

$$4a = 9b$$

$$10b = 7c$$

$$40a = 90b$$

$$90b = 63c$$

$$40a = 63c$$

$$\frac{a}{c} = \frac{63}{40}$$



24

$$a : b = 9 : 4 \quad \text{and} \quad 10b = 7c$$

Work out $a : c$ in its simplest form.

$$4a = 9b$$

[3 marks]

~~$$9a = 4b$$~~

~~$$10b = 7c$$~~

~~$$b = \frac{7}{10}c$$~~

~~$$90 : 28$$~~

~~$$9a = \frac{28}{10}c$$~~

~~$$90a = 28c$$~~

~~$$63$$~~

~~$$40$$~~

Answer

~~$$40$$~~

:

~~$$63$$~~

Turn over for the next question

$$4a = 9b$$

$$10b = 7c$$

$$b = \frac{7}{10}c$$

$$4a = \frac{63}{10}c$$

$$40a = 63c$$

Turn over ►



24

$a:b = 9:4$ and $10b = 7c$

Work out $a:c$ in its simplest form.



[3 marks]

Needs to be at KS3

Takes thought

$4a = 9b$ $10b = 7c$

$40a = 90b$ $90b = 63c$

$40a = 90b = 63c$

* Best solution.

(Most efficient).

$a:c$

$63:40$

Answer _____ :

Turn over for the next question

$a:b$

$9:4$

36

36

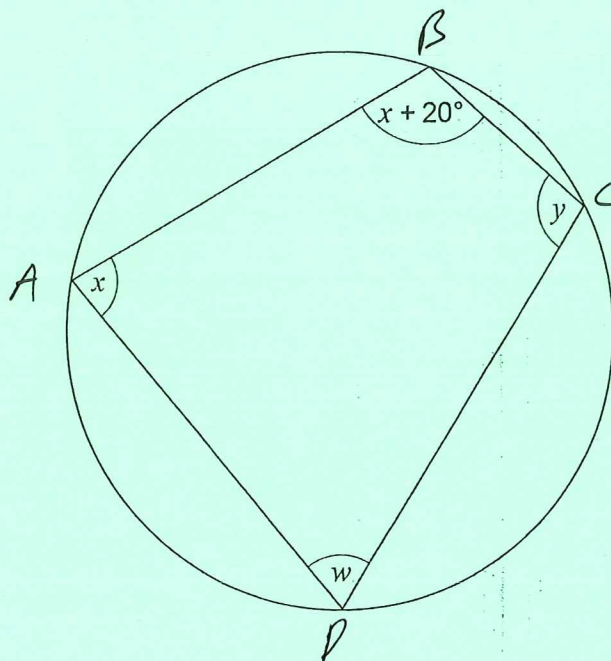
$b:c$

$7:10$



24

Here is a cyclic quadrilateral.

Not drawn
accurately

$$x : y = 5 : 7$$

Work out the size of angle w .

[4 marks]

$ABCD$ is a cyclic quadrilateral.

$$\therefore x + 20 + w = 180$$

$$x + y = 180$$

$$x : y = 5 : 7 \quad \therefore x + \frac{7}{5}x = 180$$

$$15 \times 5 \quad \frac{12}{5}x = 180$$

$$\therefore 75 + 20 + w = 180$$

$$x = 75$$

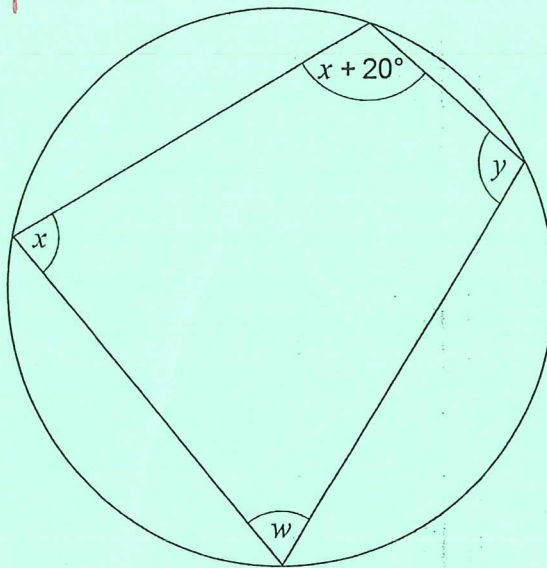
$$95 + w = 180$$

Answer $w = 85$ degrees



24

Here is a cyclic quadrilateral.

Not drawn
accurately

$$x : y = 5 : 7$$

Work out the size of angle w .

[4 marks]

$$\begin{array}{l} x \quad 15 \quad 15 \quad 15 \quad 15 \quad 15 \\ y \quad 15 \quad 15 \quad 15 \quad 15 \quad 15 \quad 15 \quad 15 \end{array} \quad \left. \vphantom{\begin{array}{l} x \\ y \end{array}} \right\} = 180$$

$$\begin{array}{r} 15 \\ 12 \overline{) 180} \end{array}$$

$$x = 75$$

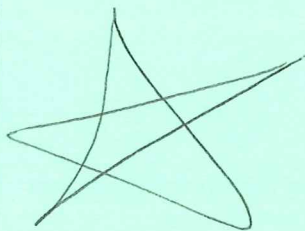
$$w = 180 - 95$$

$$w = 85$$

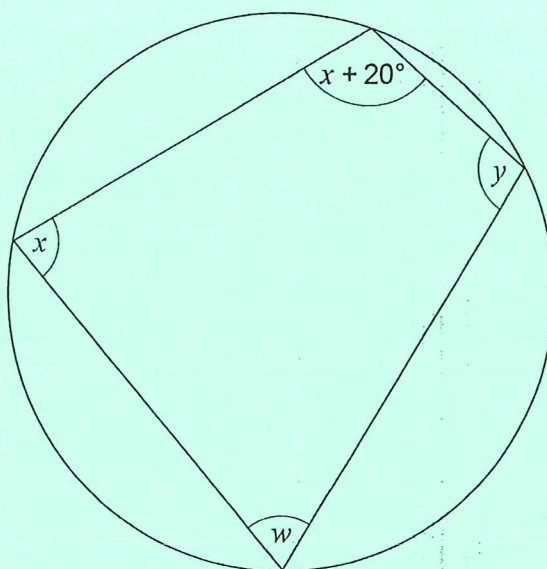
Answer 85 degrees

24

Here is a cyclic quadrilateral.



This
one.



Not drawn
accurately

$$x : y = 5 : 7$$

Work out the size of angle w .

[4 marks]

$$x + y = 180$$

$$5 + 7 = 12$$

$$180 \div 12 = 15$$

$$15 \times 5 = 75$$

$$75 + 20 = 95$$

$$180 - 95 = 85$$

Answer _____ degrees

