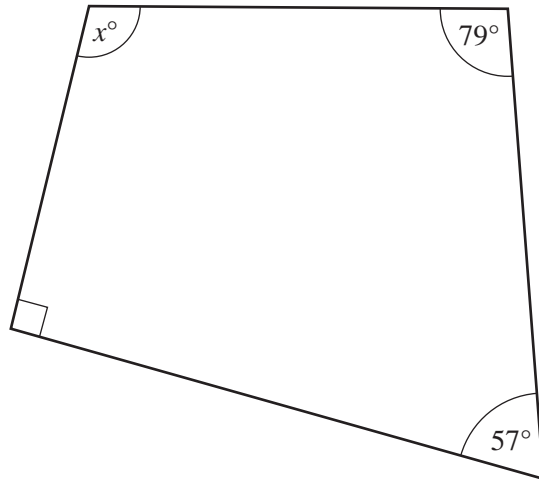


2

1



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The diagram shows a quadrilateral.
Work out the value of x .

Answer $x =$ [1]

2 Caroline changed £200 into New Zealand dollars (NZ\$).
The exchange rate was £1 = NZ\$2.56 .

How many New Zealand dollars did she receive?

Answer NZ\$ [1]

3

3 Francis recorded a temperature of -4°C on Sunday.
By Monday it had gone down by 3°C .

(a) Find the temperature on Monday.

Answer(a) $^{\circ}\text{C}$ [1]

(b) On Tuesday the temperature was -1°C .

Find the change in temperature between Monday and Tuesday.

Answer(b) $^{\circ}\text{C}$ [1]

4 The distance from the Sun to the planet Saturn is 1 429 400 000 kilometres.

Write this distance in standard form, correct to 3 significant figures.

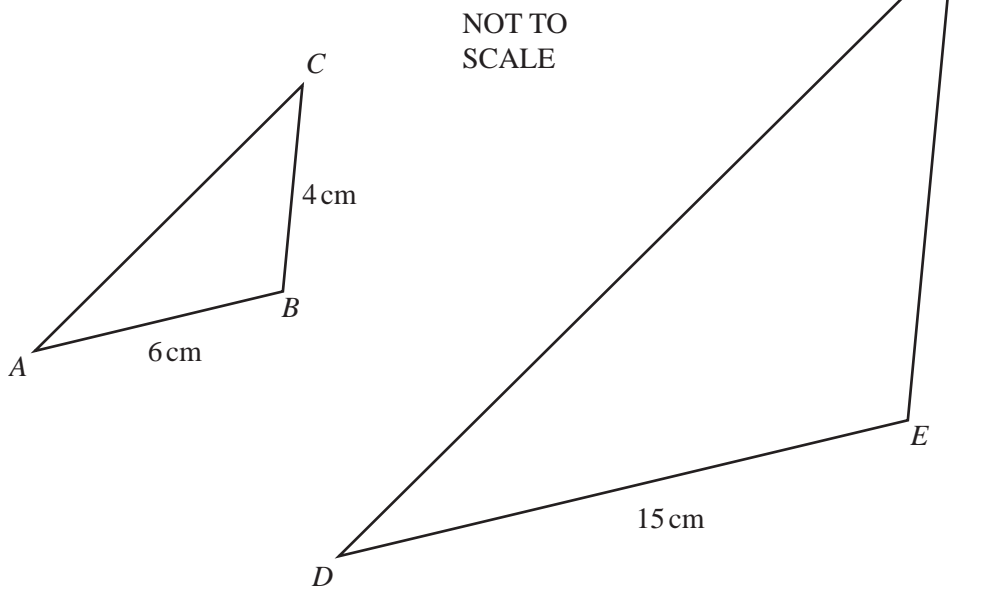
Answer km [2]

5 A factory makes doors that are each 900 millimetres wide, correct to the nearest millimetre.

Complete the statement about the width, w millimetres, of each door.

Answer $\leq w <$ [2]

6



The triangles ABC and DEF are similar.
 $AB = 6$ cm, $BC = 4$ cm and $DE = 15$ cm.

Calculate EF .

Answer $EF =$ cm [2]

7 Maria puts \$600 into a bank account for 3 years at a rate of 3.4% per year **compound** interest.

Calculate how much will be in the account at the end of the 3 years.

Answer \$ [3]

8 (a) Factorise completely.

$$8pq + 12pr$$

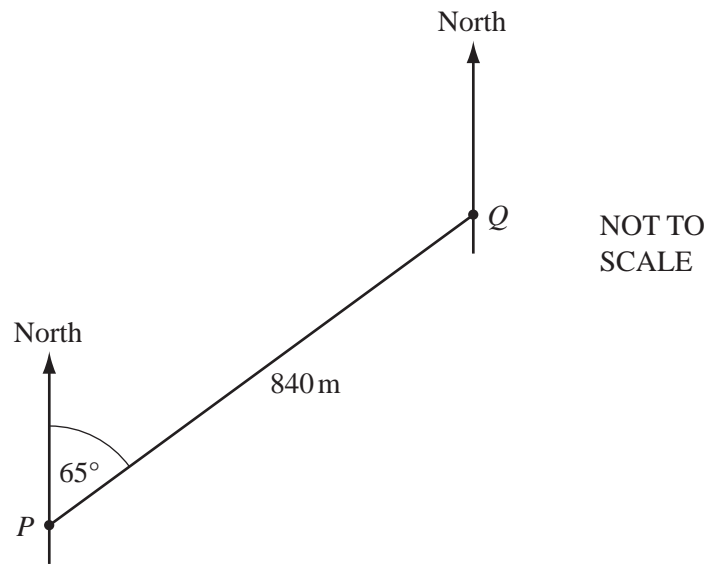
Answer(a) [2]

(b) Use your answer to part (a) to make p the subject of the formula below.

$$s = 8pq + 12pr$$

Answer(b) $p =$ [1]

9



The diagram shows a straight road PQ .
 $PQ = 840\text{m}$ and the bearing of Q from P is 065° .

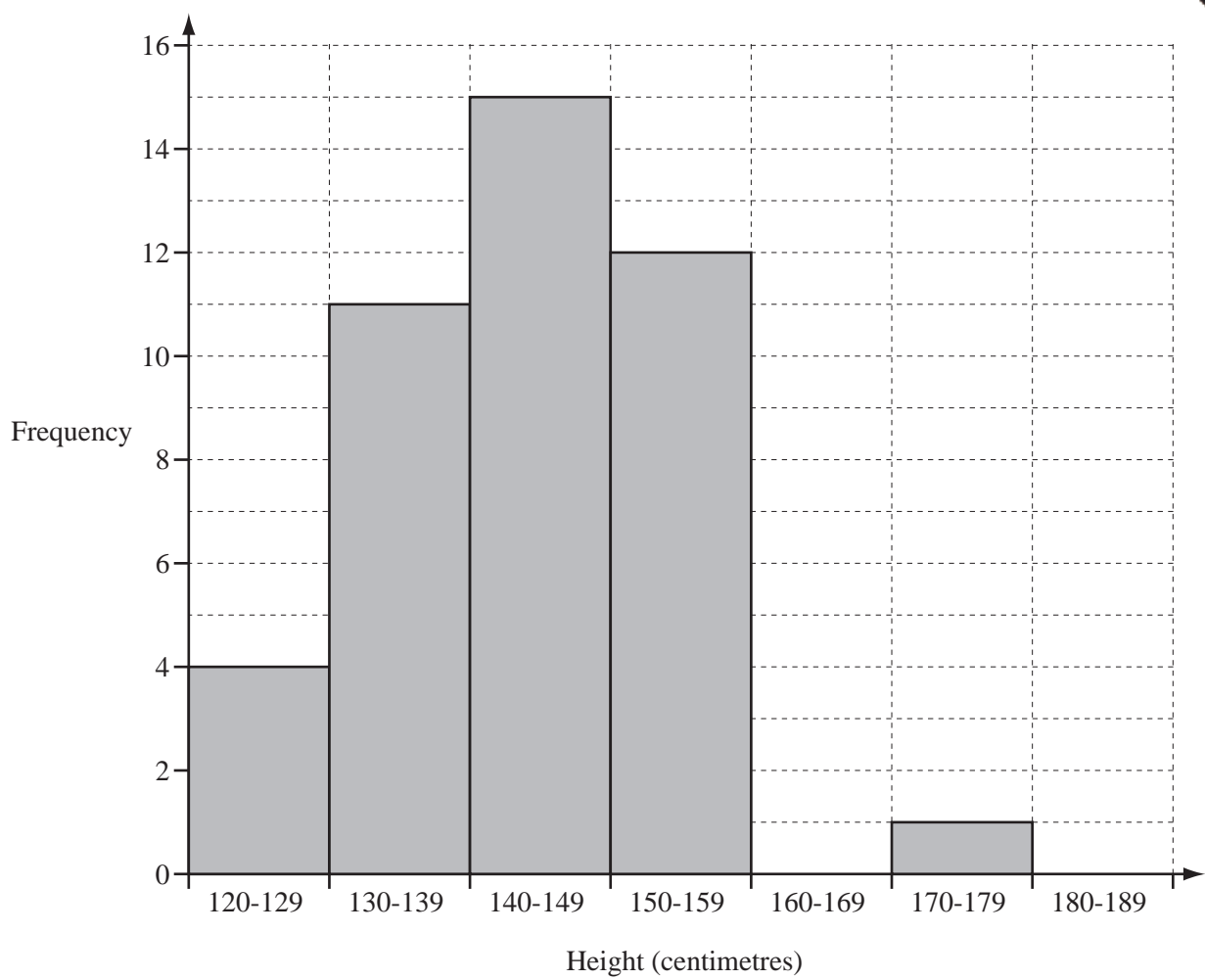
(a) Work out the bearing of P from Q .

Answer(a) [1]

(b) Calvin walks $\frac{4}{7}$ of the distance from P to Q .
How far is he **from** Q ?

Answer(b) m [2]

10 The heights of 43 children are measured to the nearest centimetre. Braima draws a bar chart from this information.



A child is chosen at random.
Write down, as a fraction, the probability that the child will be

(a) in the group 140 – 149 cm,

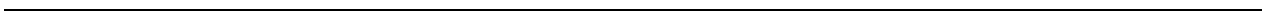
Answer(a) [1]

(b) less than 160 cm,

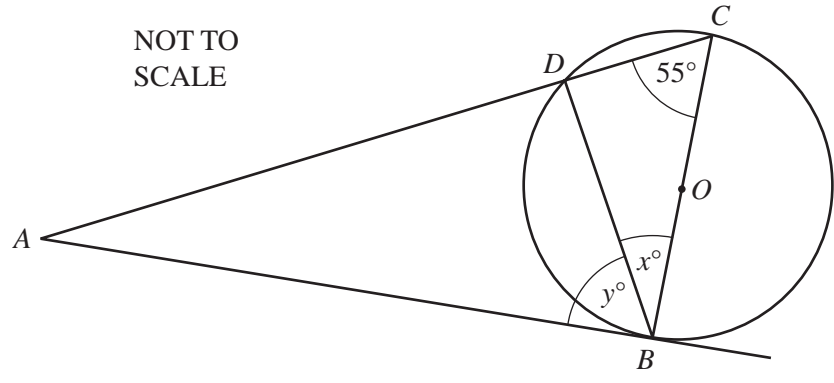
Answer(b) [1]

(c) in the group 160 – 169 cm.

Answer(c) [1]



11



The diagram shows a circle, centre O , with diameter BC .
 AB is a tangent to the circle at B and angle $BCD = 55^\circ$.
 A straight line from A meets the circle at D and C .

Calculate the value of

(a) x ,

Answer(a) $x =$ [2]

(b) y .

Answer(b) $y =$ [1]

12 (a) Write down the value of x when

(i) $5^x \div 5^2 = 5^4$,

Answer(a)(i) $x =$ [1]

(ii) $\frac{1}{49} = 7^x$.

Answer(a)(ii) $x =$ [1]

(b) Write down the value of $3p^0$.

Answer(b) [1]

13 Dominic, Esther, Flora and Galena shared a pizza.

(a) Dominic ate $\frac{1}{5}$ of the pizza and Esther ate $\frac{2}{7}$ of the pizza.

Show that $\frac{18}{35}$ of the pizza remained.

Do not use your calculator and show all your working.

Answer (a)

[2]

(b) Flora ate $\frac{2}{3}$ of the **pizza that remained**.

Find the fraction of the pizza that was left for Galena.

Answer(b) [2]

14

$$\frac{9.6 \times 7.8 - 0.53 \times 86}{4.95}$$

(a) (i) Rewrite this calculation with each number written correct to 1 significant figure.

Answer(a)(i)

[1]

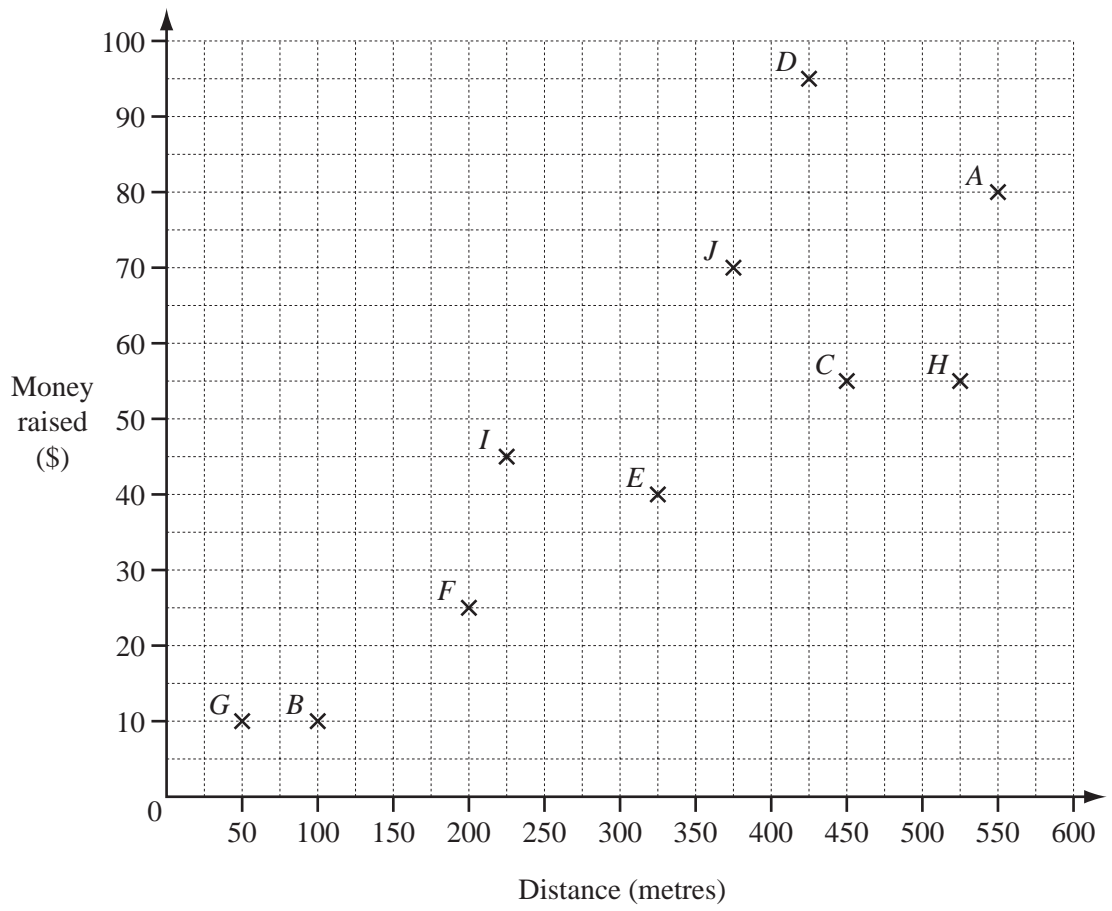
(ii) Work out the answer to your calculation in **part(a)(i)**.
Do not use a calculator and show all your working.

Answer(a)(ii) [2]

(b) Use your calculator to work out the correct answer to the original calculation.

Answer(b) [1]

15 Some children took part in a sponsored swim to raise money for charity. The scatter diagram shows the results for 10 of the children.



(a) (i) How much further did A swim than J?

Answer(a)(i) m [1]

(ii) How much more money did D raise than F?

Answer(a)(ii) \$ [1]

(b) The results for 2 more children are given in the table below.

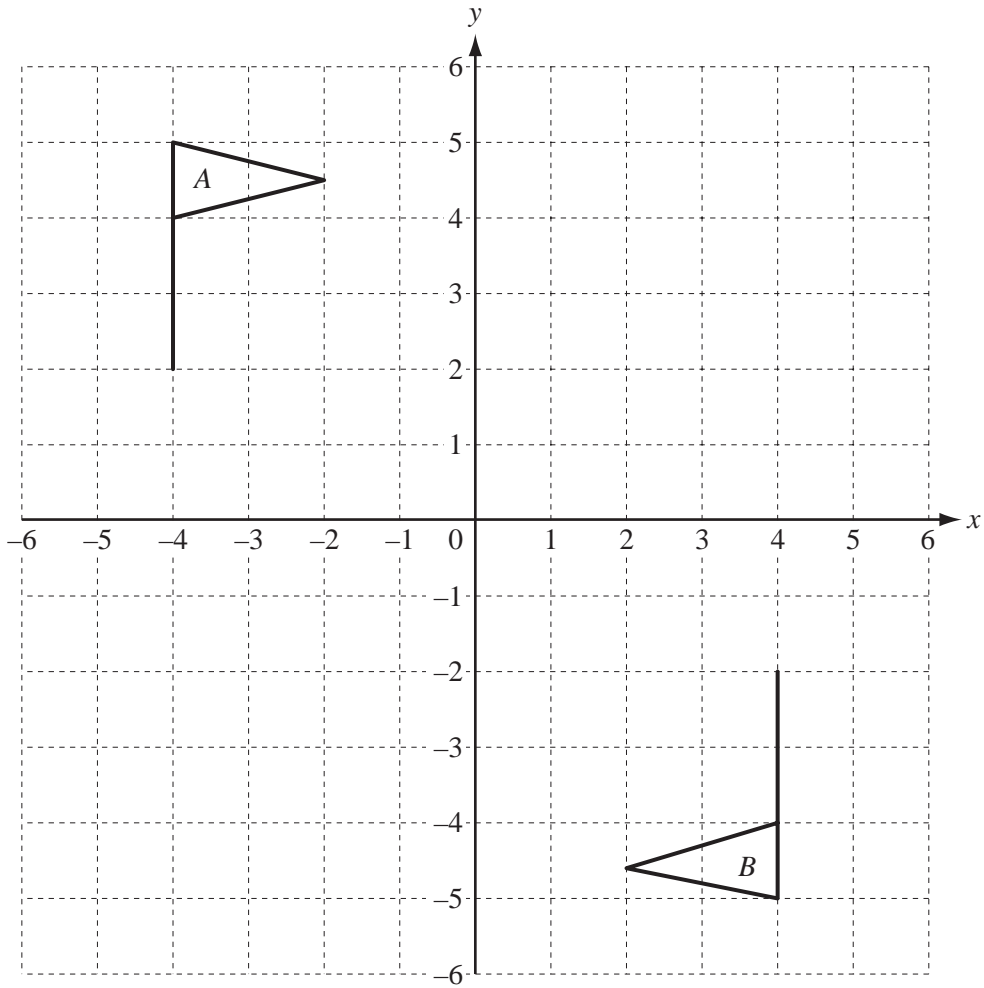
Child	Distance (m)	Money raised (\$)
K	125	35
L	475	80

Plot the results for K and L on the scatter diagram. [1]

(c) What type of correlation does the scatter diagram show?

Answer(c) [1]

16 Flags *A* and *B* are shown on the grid.

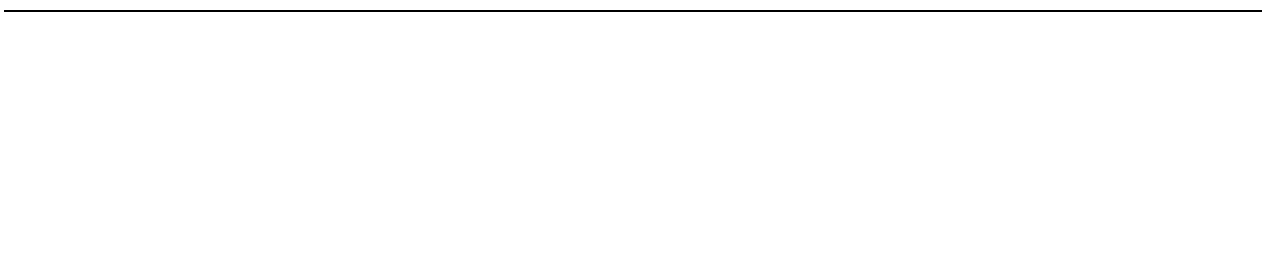


(a) Describe fully the **single** transformation which maps flag *A* onto flag *B*.

Answer(a)

..... [3]

(b) On the grid, draw the translation of flag *A* by the vector $\begin{pmatrix} 5 \\ -3 \end{pmatrix}$. [2]



17

$$\vec{AB} = \begin{pmatrix} 3 \\ -3 \end{pmatrix}$$

$$\vec{AC} = \begin{pmatrix} -5 \\ 0 \end{pmatrix}$$

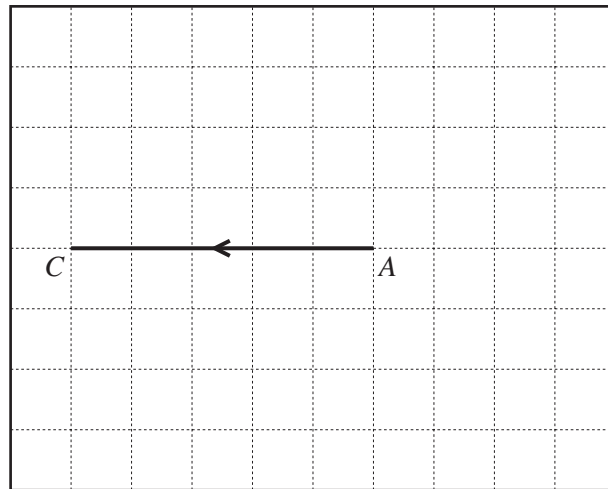
(a) Calculate $\vec{AB} + 3\vec{AC}$.

Answer(a) $\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [2]

(b) Write down \vec{BA} .

Answer(b) $\vec{BA} = \begin{pmatrix} \quad \\ \quad \end{pmatrix}$ [1]

(c) \vec{AC} is drawn on the grid below.

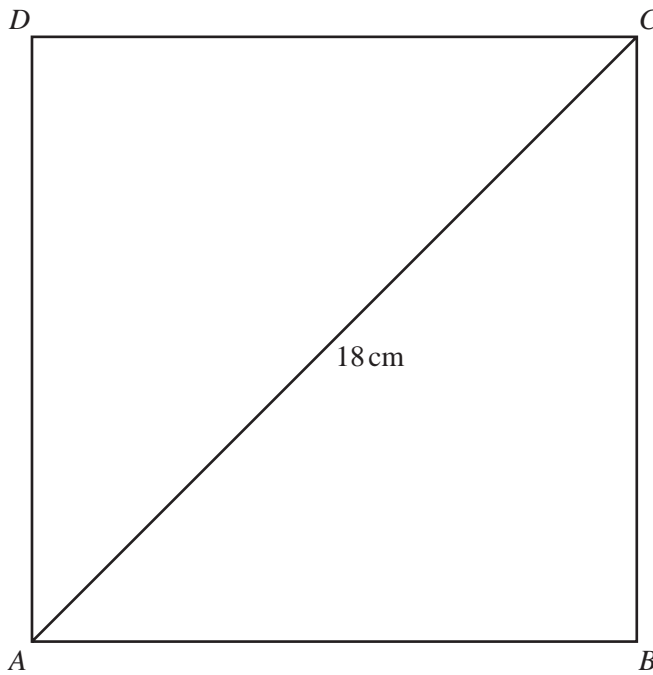


(i) On the grid, draw \vec{AB} . [1]

(ii) Write down the obtuse angle between \vec{AB} and \vec{AC} .

Answer(c)(ii) [1]

Question 18 is printed on the next page.



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The diagram shows a square $ABCD$.
The length of the diagonal AC is 18 cm.

(a) Calculate

(i) the length of the side of the square,

Answer(a)(i) cm [2]

(ii) the area of the square.

Answer(a)(ii) cm^2 [2]

(b) A, B, C and D lie on a circle with diameter AC .

Calculate the area of this circle.

Answer(b) cm^2 [2]