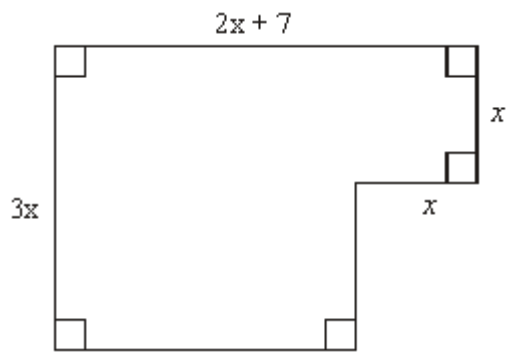


Q1. The perimeter of this shape is 22 cm.



All measurements are in centimeters

Find the area.

..... cm²

(Total 5 marks)

Q2.

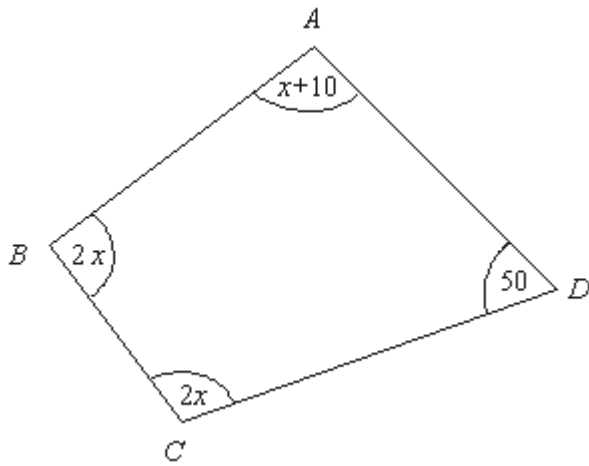


Diagram **NOT** accurately drawn

In this quadrilateral, the sizes of the angles, in degrees, are

$$x + 10$$

$$2x$$

$$2x$$

$$50$$

- (a) Use this information to write down an equation in terms of x .

.....

(2)

- (b) Work out the value of x .

$$x = \dots\dots\dots$$

(3)

(Total 5 marks)

Q3.

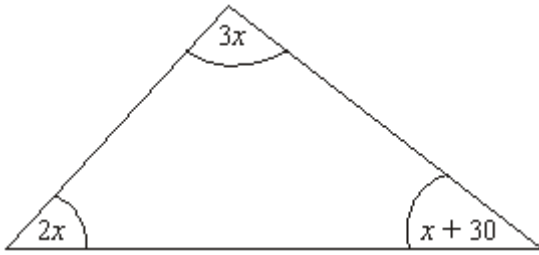


Diagram **NOT** accurately drawn

The diagram shows a triangle.
The sizes of the angles, in degrees, are

$$3x$$

$$2x$$

$$x + 30$$

Work out the value of x .

$$x = \dots\dots\dots$$

(Total 3 marks)

M1.

Working	Answer	Mark	Additional Guidance
$2(3x + 2x + 7) = 22$ OR $3x + 2x + 7 + x + x + 2x + x + 7 = 22$ $10x + 14 = 22$ $10x = 8$ $x = 0.8$ Area = $2.4 \times 8.6 - 1.6 \times 0.8$ OR $0.8 \times 0.8 + 2.4 \times 7.8$	19.36 cm ²	5	M1 for attempt to find an expression of the perimeter A1 for $10x + 14 = 22$ A1 for $x = 0.8$ M1 for attempt to find area A1 for 19.36
Total for Question: 5 marks			

M2.

	Working	Answer	Mark	Additional Guidance
(a)	$2x + 2x + x + 10 + 50 = 360$	$5x + 60 = 360$	2	M1 3 or 4 out of $2x$, $2x$, $x + 10$, 50 added together A1 $2x + 2x + x + 10 + 50 = 360$ oe including $x = 60$
(b)	$5x + 60 = 360$ $5x = 300$	60	3	M1 for isolating their terms in x M1 for dividing their numerical term by the coefficient of their x term A1 cao All the marks in (b) may be given for work done in answering (a) providing there is no contradiction Candidates can score full marks in (b)

				independent of their answer in (a) (e. g. by starting again)
Total for Question: 5 marks				

M3.

Working	Answer	Mark	Additional Guidance
$x + 30 + 2x + 3x = 180$ $6x + 30 = 180$ $6x = 150$	25	3	M1 for $x + 30 + 2x + 3x$ or $6x+30$ seen or $180 - 30$ or 150 seen M1 (dep) for $6 \times +30 = 180$ or better $\frac{180 - 30}{6}$ or A1 cao
Total for Question: 3 marks			

E2. This was a linked question in which in part (a) candidates had to derive an equation and then solve the equation in part (b). Many candidates did in fact produce the equation $5x + 60 = 360$ as their answer. These candidates usually went on to solve the equation correctly. A few candidates did simplify the expression $x + 2x + 2x + 10 + 50$ as $4x^2 + 60$

Of those candidates who could not do part (a), a sizable number were still able to find the value of x in part (b) by judicious use of the calculator. They earned the marks available for part (b). Many candidates put down an incomplete answer to part (a) by just writing the expression $5x + 60$. Many of them went on to find the value of x as 60 in part (b) but sadly a minority then made up and solved the equation $5x + 60 = 0$

E3. Foundation

This question was successfully attempted by about one third of candidates. Usually, successful candidates had used a trial and improvement approach or subtracted 30 from 180 then divided by 6. Symbolism in the form of constructing and solving an equation was not often seen. Common errors included dividing 150° by 5 rather than 6. Many candidates mistakenly assumed one angle (the angle marked $3x$) was a right angle and so divided 90° by 3 to get their answer.

Higher

The correct answer to this question was often found by trial and improvement methods as opposed to an attempt at an algebraic approach. This method therefore usually gained full marks or no marks at all. Some candidates tried to develop an algebraic equation but made errors in their sum of $3x$, $2x$ and x or ignored the '30' in the ' $x + 30$ ' giving an answer of 30° ($180 \div 6$).