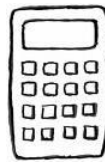


Name:

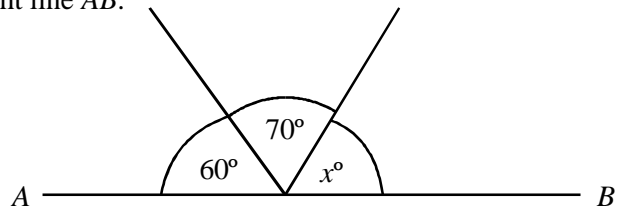
Teacher Assessment



Section A **Angle Facts** **Grade F → D**

IN THIS SECTION NONE OF THE DIAGRAMS ARE DRAWN ACCURATELY.

1. (a) The diagram shows 3 angles on a straight line AB .



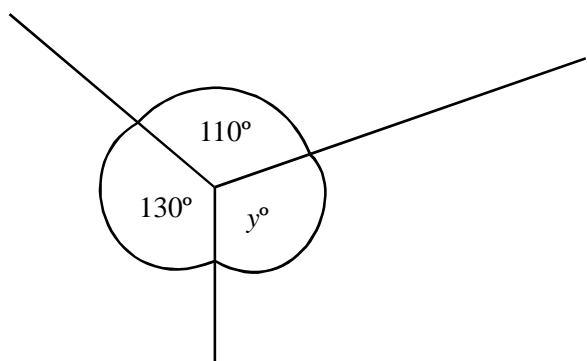
Work out the value of x .

.....
.....

Answer degrees

(1)

- (b) The diagram shows 3 angles meeting at point.



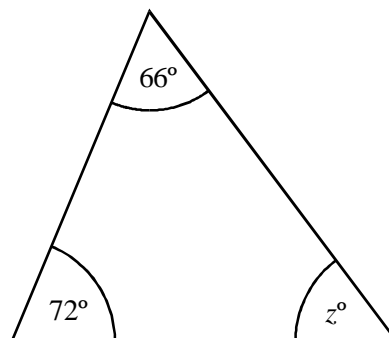
Work out the value of y .

.....
.....

Answer degrees

(1)

- (c)



Not drawn accurately

Work out the value of z .

.....
.....

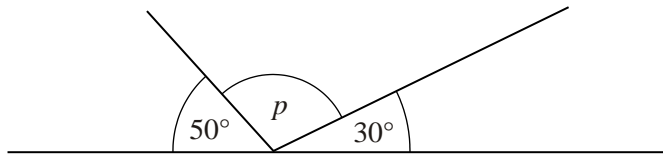
Answer degrees

(1) (Total 3 marks)

2. Work out the size of each missing angle in the diagrams below.

(a)

Not drawn accurately



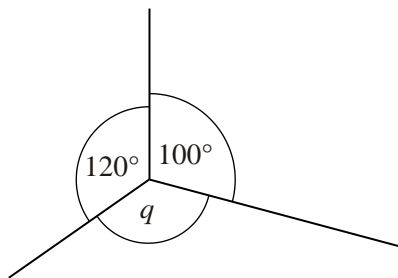
.....

Answer $p =$ degrees

(1)

(b)

Not drawn accurately

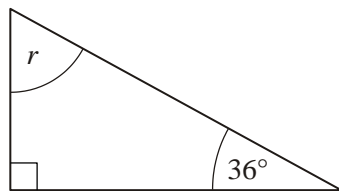


Answer $q =$ degrees

(2)

(c)

Not drawn accurately



.....

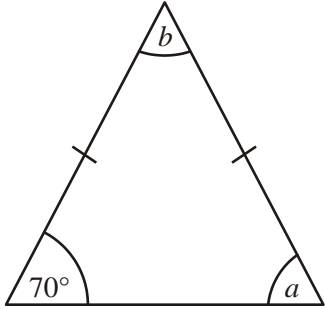
.....

Answer $r =$ degrees

(2)

(Total 5 marks)

3. This triangle has two equal sides.



Not drawn accurately

- (a) What name is given to this type of triangle?

Answer

(1)

- (b) Find the values of a and b .

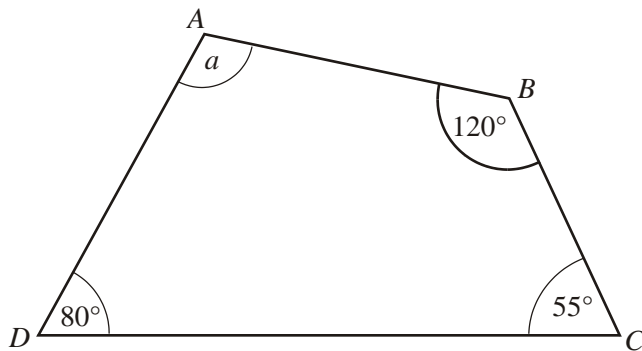
.....

Answer $a = \dots\dots\dots$ degrees, $b = \dots\dots\dots$ degrees

(3)

(Total 4 marks)

4. $ABCD$ is a quadrilateral.



Not drawn accurately

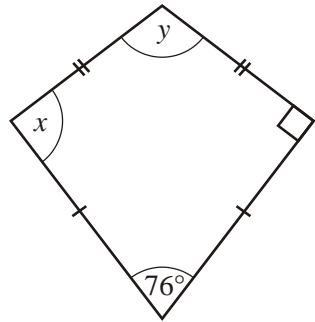
Work out the value of a .

.....

Answer

(Total 2 marks)

5. The diagram shows a kite.



Not drawn accurately

(a) (i) Write down the value of x .

Answer degrees

(1)

(ii) Give a reason for your answer.

.....
.....

(1)

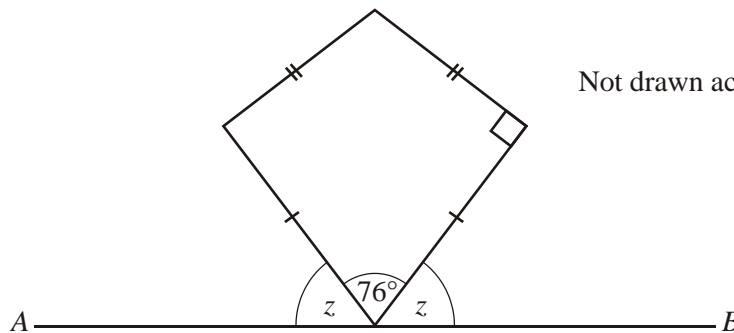
(b) Work out the value of y .

.....
.....
.....

Answer degrees

(2)

(c) A line segment AB is now drawn as shown.



Not drawn accurately

Work out the value of z .

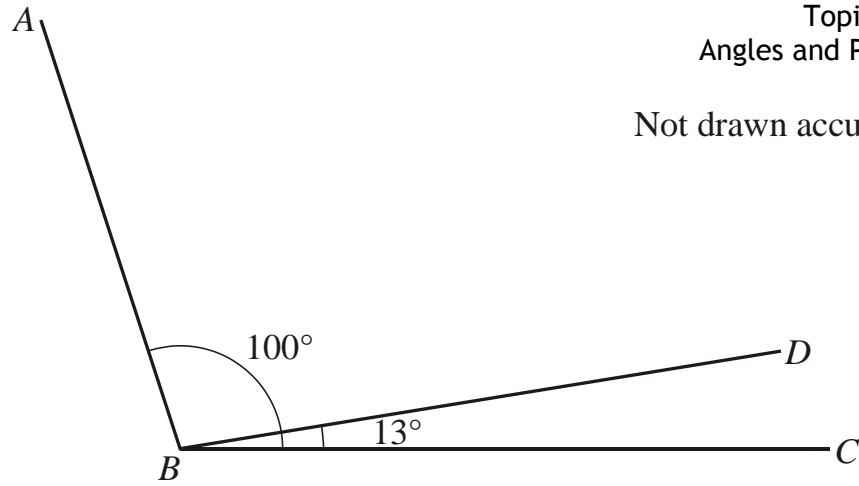
.....
.....

Answer degrees

(2)(Total 6 marks)

Not drawn accurately

6. Angle $ABC = 100^\circ$
Angle $DBC = 13^\circ$



- (a) What type of angle is ABC ?

Answer (1)

- (b) What type of angle is DBC ?

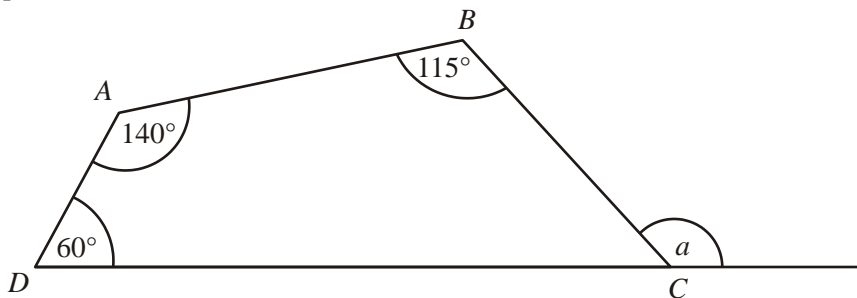
Answer (1)

- (c) Work out the size of angle ABD .

.....
.....

Answer degrees
(1)(Total 3 marks)

7. $ABCD$ is a quadrilateral.

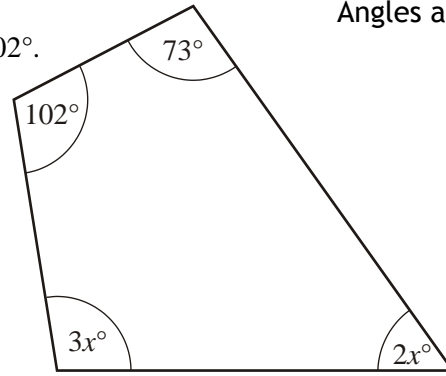


Work out the size of the exterior angle a .

.....
.....
.....
.....

Answer degrees
(Total 3 marks)

8. The angles of a quadrilateral are 73° , $2x^\circ$, $3x^\circ$ and 102° .



- (a) Write down an equation in x .

.....
.....

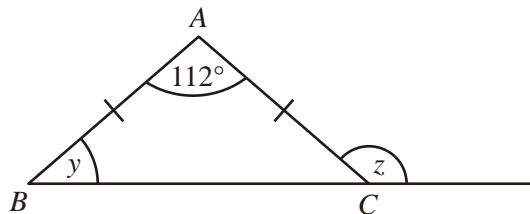
(2)

- (b) Use your equation to find the largest angle in the quadrilateral.

.....
.....
.....
.....

Answer degrees
(3)(Total 5 marks)

9. The diagram shows an isosceles triangle ABC .
Angle $BAC = 112^\circ$



- (a) Calculate the size of angle y .

.....
.....

Answer $y =$ degrees

(2)

- (b) Write down the size of angle z .

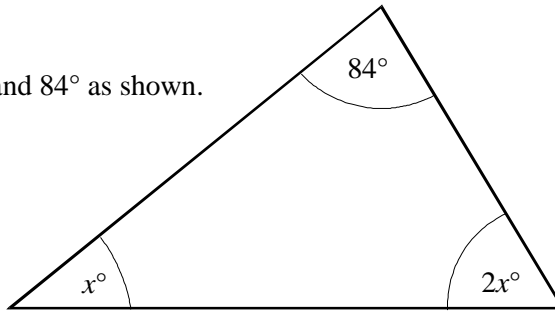
.....
.....

Answer $z =$ degrees

(1)(Total 3 marks)

10. The triangle has angles x° , $2x^\circ$ and 84° as shown.
Find the value of x .

Not drawn accurately



.....

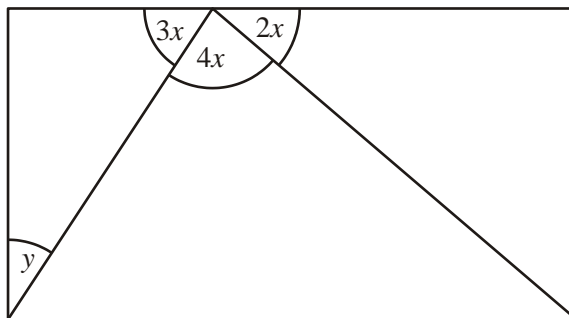
Answer degrees
(Total 3 marks)

11. (a) Simplify $2x + 3x + 4x$

.....

Answer
(1)

- (b) The diagram shows a triangle inside a rectangle.



Not drawn accurately

- (i) Work out the value of x .

.....

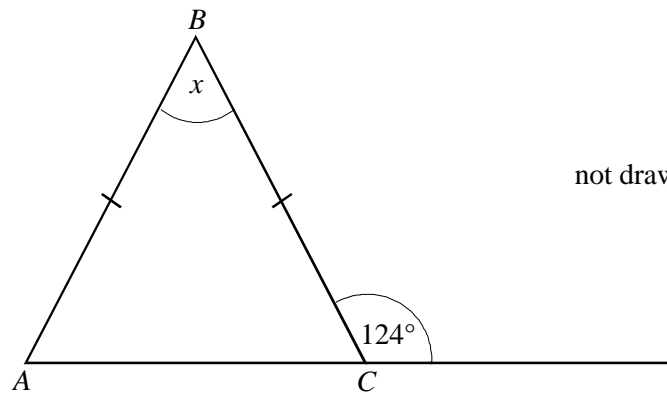
Answerdegrees
(2)

- (ii) Work out the value of y .

.....

Answerdegrees
(3)
(Total 6 marks)

12. (a) ABC is an isosceles triangle with $AB = BC$



not drawn accurately

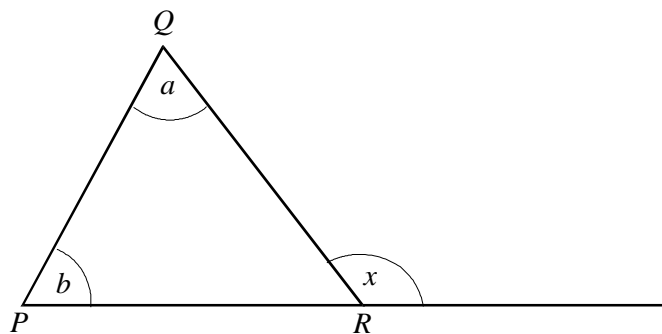
Calculate the size of the angle marked x .

.....

Answer degrees

(3)

- (b) PQR is any triangle.



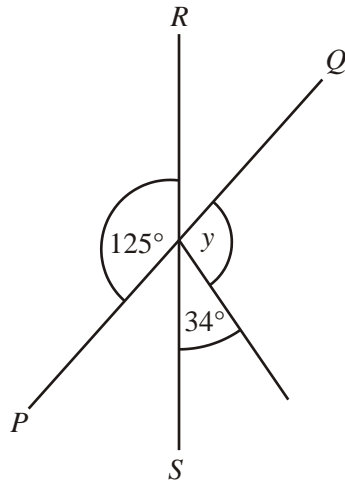
Explain why $x = a + b$

.....

(2)

(Total 5 marks)

13. PQ and RS are straight lines.



Not drawn accurately

Work out the value of y .

.....

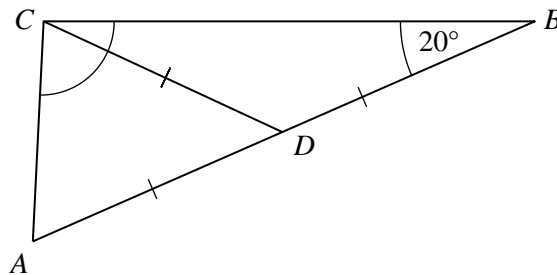
.....

.....

Answer $y =$ degrees

(Total 3 marks)

14. The diagram shows a triangle ABC . D is a point on AB such that $DB = DA = DC$. Angle $ABC = 20^\circ$.



Not drawn accurately

Work out the size of angle ACB . You **must** show your working.

.....

.....

.....

.....

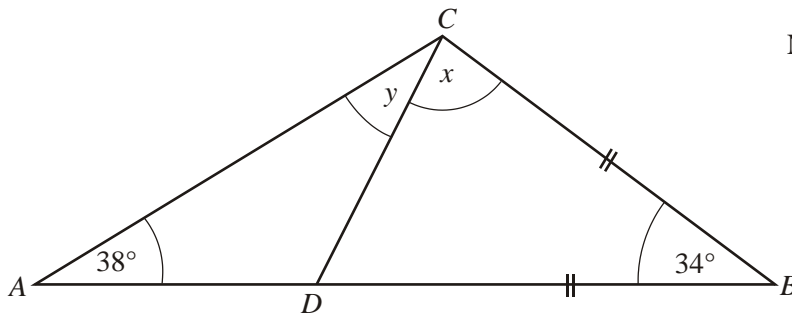
.....

.....

Answer degrees

(Total 3 marks)

15. ABC is a triangle.
 D is a point on AB such that $BC = BD$.



Not drawn accurately

- (a) Work out the value of x .

.....
.....

Answer degrees

(2)

- (b) Work out the value of y .

.....
.....

Answer degrees

(2)

- (c) Does $AD = DC$?
Give a reason for your answer.

.....
.....

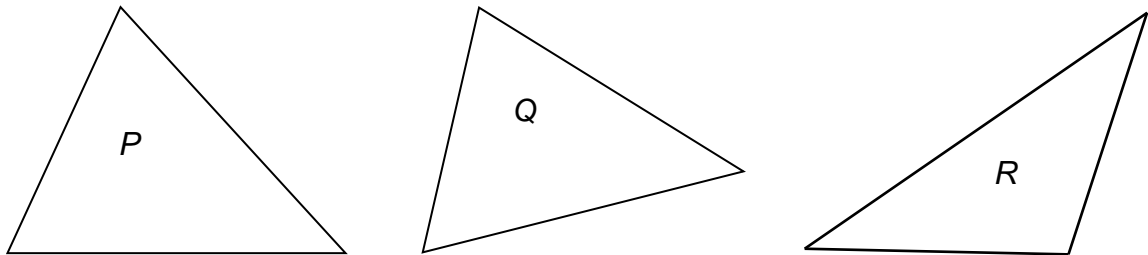
(1)

(Total 5 marks)

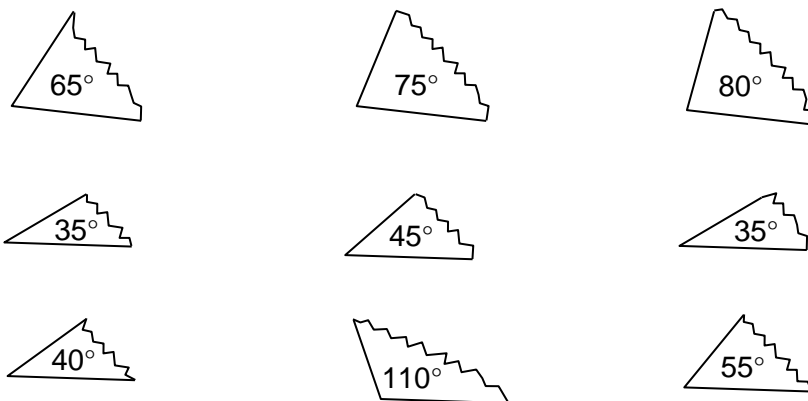
16. Three triangles, P , Q and R are cut out of paper.

The angles are measured.

Not drawn accurately



The corners are torn off each triangle and mixed up as shown.



Identify the three sets of angles that go with each triangle.

Triangle P has angles and and

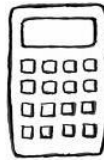
Triangle Q has angles and and

Triangle R has angles and and

(Total 3 marks)

Success:

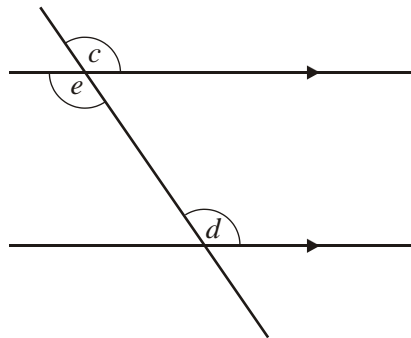
Target:



Section B **Angles and Parallel Lines** **Grade C**

1. The words in this list are used to describe angles.

alternate corresponding exterior interior opposite



Not drawn accurately

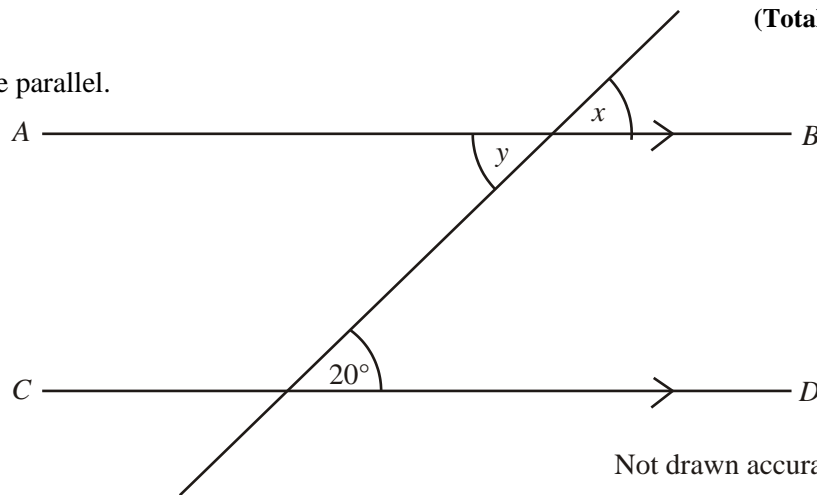
Choose a word from the list to describe each of these pairs of angles.

(i) c and d are angles (1)

(ii) d and e are angles (1)

(Total 2 marks)

2. The lines AB and CD are parallel.



Not drawn accurately

(a) State the value of x . Give a reason for your answer.

Answer $x =$ degrees

Reason.....
.....

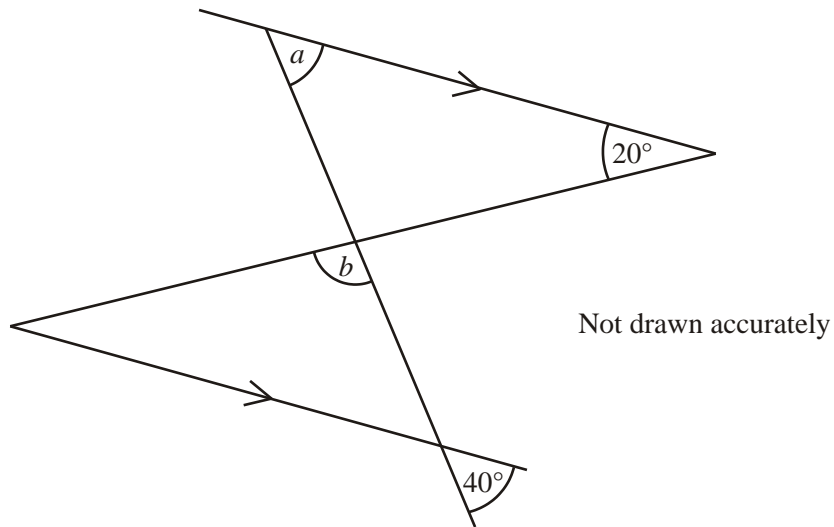
(2)

(b) Write down the value of y .

Answer $y =$ degrees

(1)(Total 3 marks)

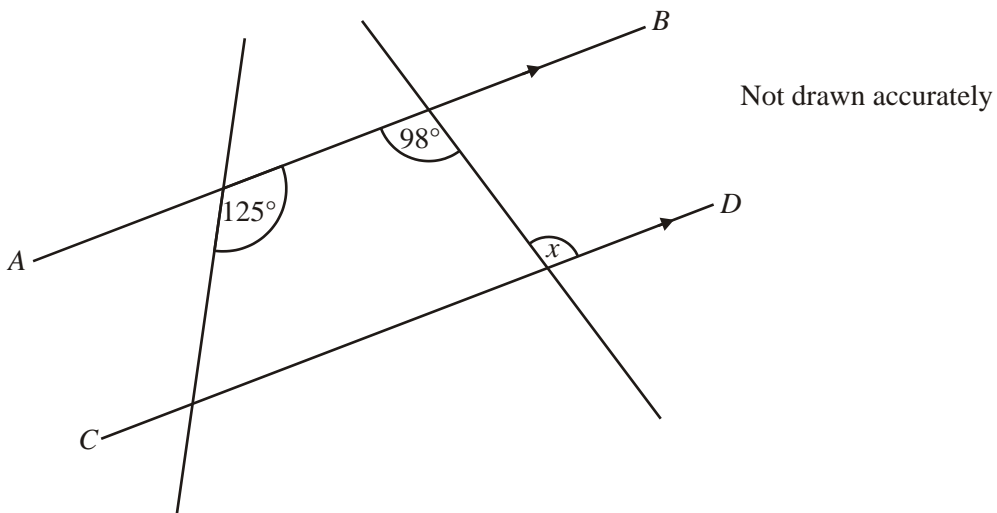
3. Work out the size of angles a and b .



.....

Answer $a =$degrees, $b =$degrees
(Total 3 marks)

4. The lines AB and CD are parallel.



Work out the value of x . Give a reason for your answer.

.....

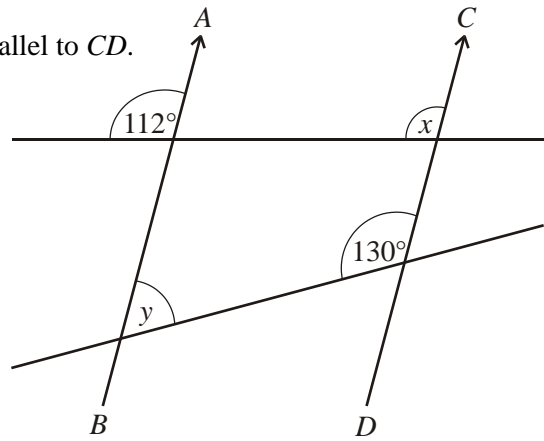
Answer degrees

Reason

(Total 2 marks)

Not drawn accurately

5. In the diagram, AB is parallel to CD .



- (a) State the value of x . Give a reason for your answer.

Answer degrees

Reason

.....

(2)

- (b) Find the value of y .

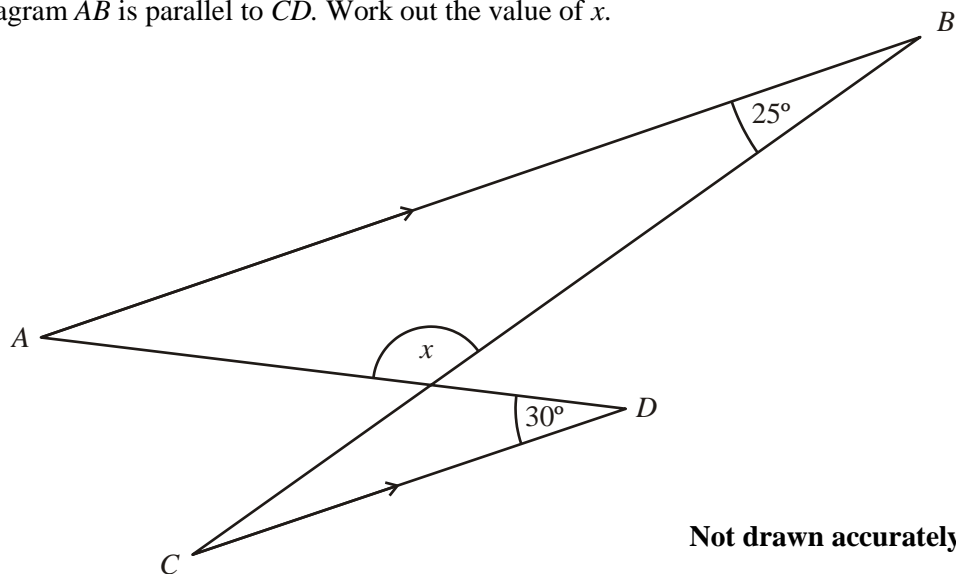
.....

.....

Answer degrees

(2)(Total 4 marks)

6. In the diagram AB is parallel to CD . Work out the value of x .



Not drawn accurately

.....

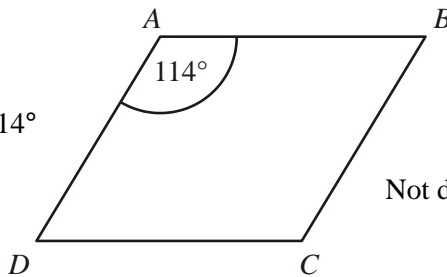
.....

.....

Answer $x =$ degrees

(Total 3 marks)

7. $ABCD$ is a rhombus. Angle $A = 114^\circ$



Not drawn accurately

- (a) Find the size of angle C .

.....
.....

Answer degrees

(1)

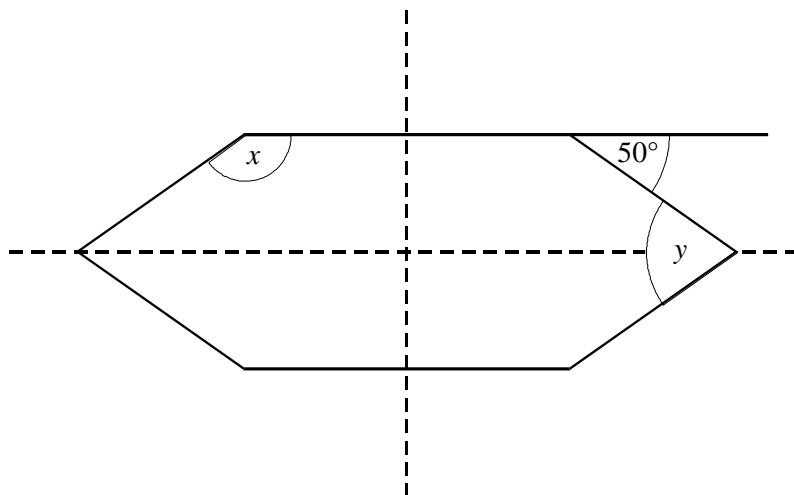
- (b) Find the size of angle D .

.....
.....

Answer degrees

(2)(Total 3 marks)

8. The diagram shows a hexagon.
The hexagon has two lines of symmetry as shown.



Not drawn accurately

- (i) Work out the value of x .

.....

Answer degrees

(1)

- (ii) Work out the value of y .

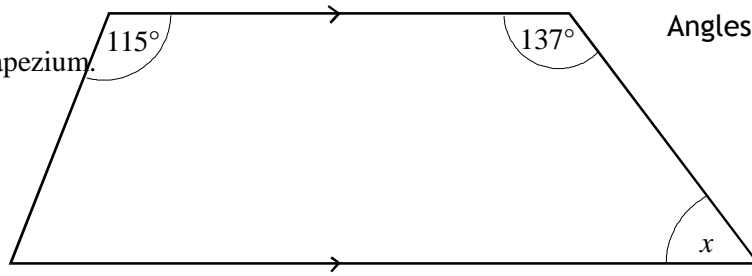
.....

Answer degrees

(2)

(Total 3 marks)

9. The diagram shows a trapezium.



Not drawn accurately

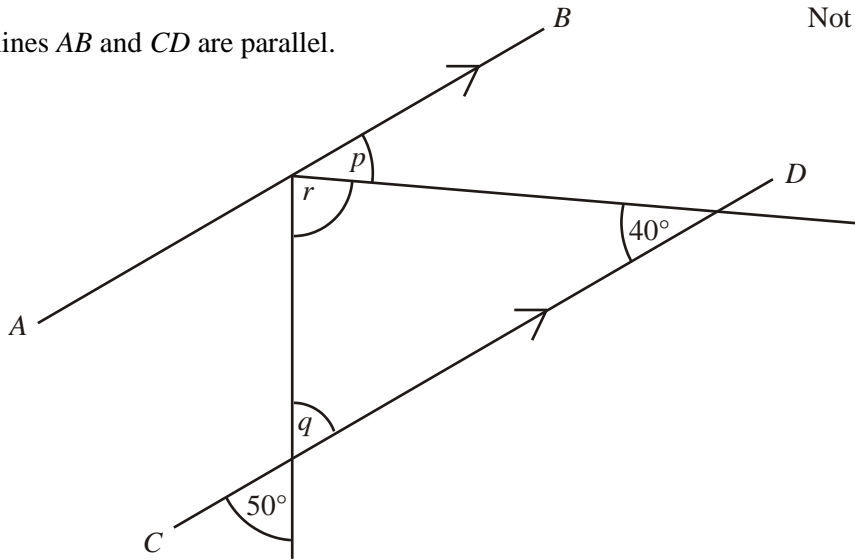
Calculate the value of x .

.....
.....

Answer degrees
(Total 2 marks)

10. The lines AB and CD are parallel.

Not drawn accurately



(a) Write down the value of p . Give a reason for your answer.

Answer $p =$ degrees

Reason

(2)

(b) Write down the value of q . Give a reason for your answer.

Answer $q =$ degrees

Reason

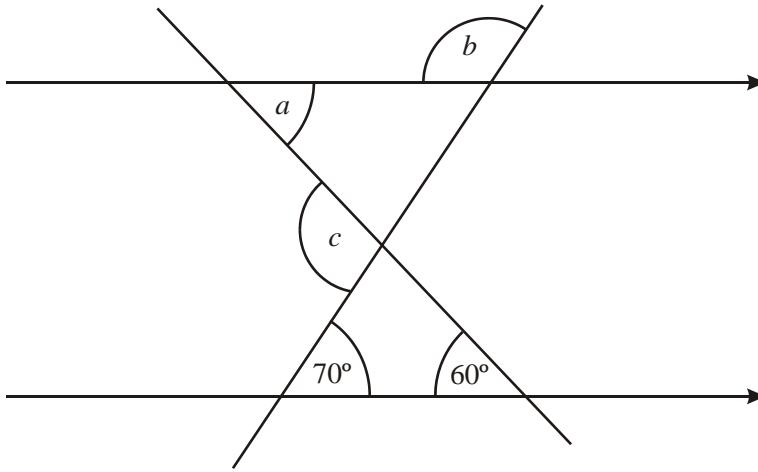
(2)

(c) Work out the value of r .

.....
.....

Answer $r =$ degrees
(2)(Total 6 marks)

11.



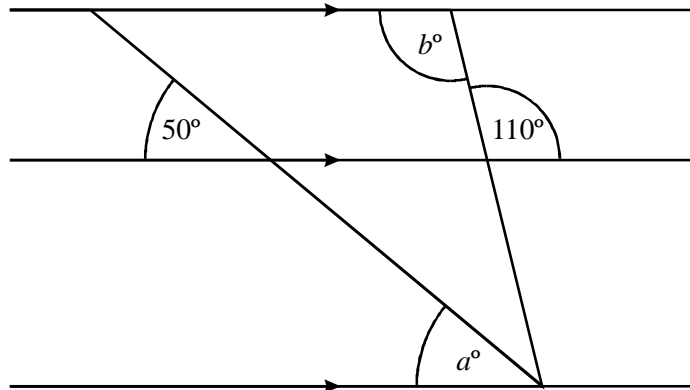
Not drawn accurately

Work out the values of a , b and c .

.....
.....

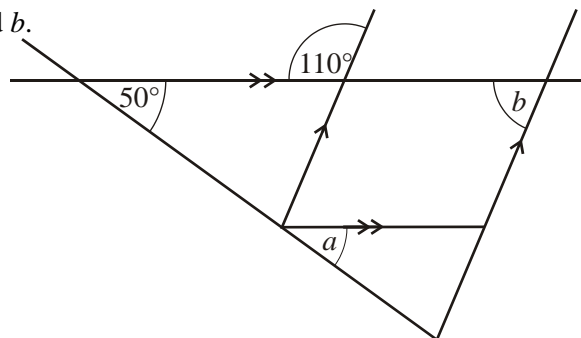
Answer $a =$ degrees $b =$ degrees $c =$ degrees
(Total 3 marks)

12. Write down the values of a and b .



Answer $a =$ degrees, $b =$ degrees
(Total 2 marks)

13. Write down the values of a and b .



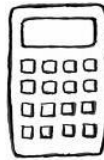
Not drawn accurately

.....
.....

Answer $a =$ degrees, $b =$ degrees
(Total 2 marks)

Success:

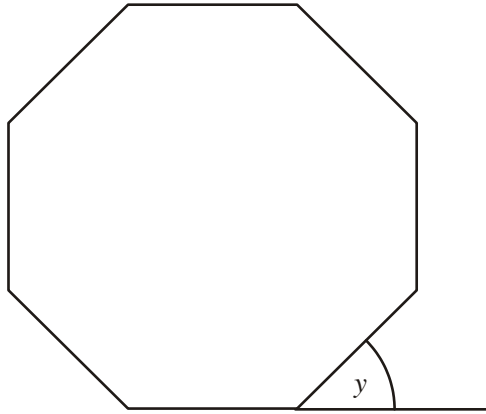
Target:



Section C **Angles in Polygons** **Grade C**

1. The diagram shows a regular octagon.

Not drawn accurately



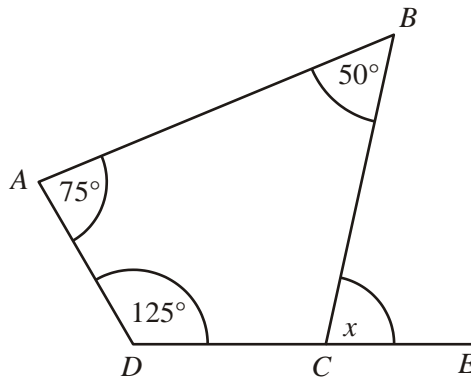
Calculate the size of the exterior angle of the regular octagon, marked y on the diagram.

.....
.....
.....

Answer.....

(Total 2 marks)

2. (a) $ABCD$ is a quadrilateral. The side DC is extended to E .



Not drawn accurately

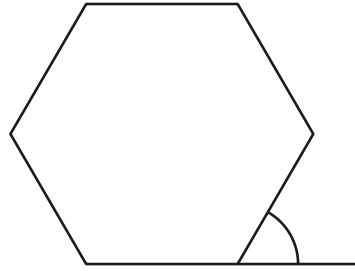
Work out the value of x .

.....
.....

Answer degrees

(3)

- (b) Calculate the size of the exterior angle of a regular hexagon.

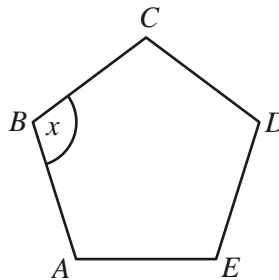


Not drawn accurately

.....
.....

Answer degrees
(2)(Total 5 marks)

3. (a) *ABCDE* is a regular pentagon.



Not drawn accurately

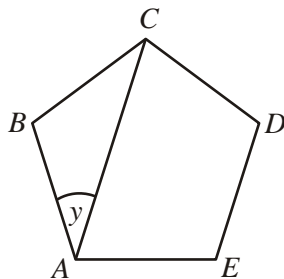
Work out the value of the interior angle x .

.....
.....

Answer $x =$ degrees

(2)

- (b) *ABCDE* is a regular pentagon.



Not drawn accurately

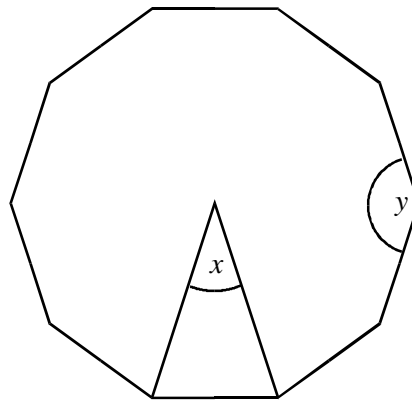
Work out the value of y .

.....
.....
.....

Answer $y =$ degrees

(2)(Total 4 marks)

4. The diagram shows a regular decagon.



Not drawn accurately

- (a) Work out the angle at the centre of the decagon, marked x on the diagram.

.....
.....

Answer degrees

(2)

- (b) Work out the size of the interior angle, marked y on the diagram.

.....
.....

Answer degrees

(2)

(Total 4 marks)

5. (a) A regular polygon has 9 sides.
Calculate the size of an interior angle.

.....
.....
.....

Answer.....degrees

(2)

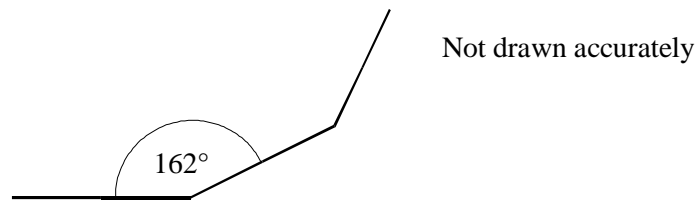
- (b) Explain why there is no regular polygon which has an interior angle of 155° .

.....
.....
.....

(3)

(Total 5 marks)

6. The diagram shows part of a regular polygon. Each interior angle is 162° .



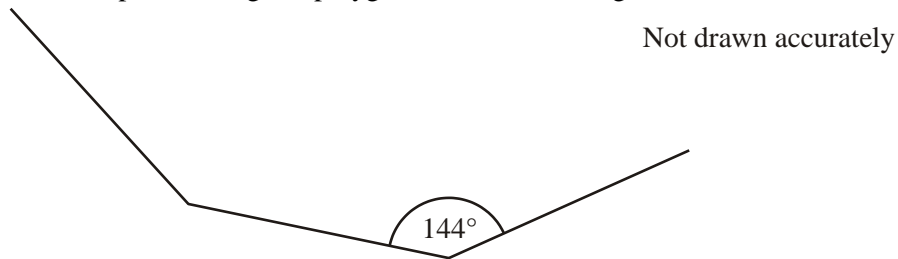
Calculate the number of sides of the polygon.

.....

Answer

(Total 3 marks)

7. The diagram shows part of a regular polygon. Each interior angle is 144° .



- (i) Calculate the size of the exterior angle of the polygon.

.....

Answer degrees

(2)

- (ii) Calculate the number of sides of the polygon.

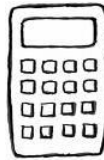
.....

Answer

(2)(Total 4 marks)

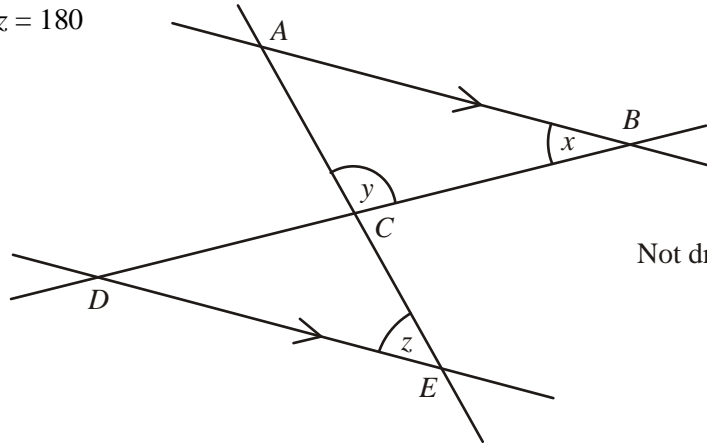
<p>Success:</p>

<p>Target:</p>



Section D **Geometric Proofs** **Grade C / B**

1. Show that $x + y + z = 180$



Not drawn accurately

.....

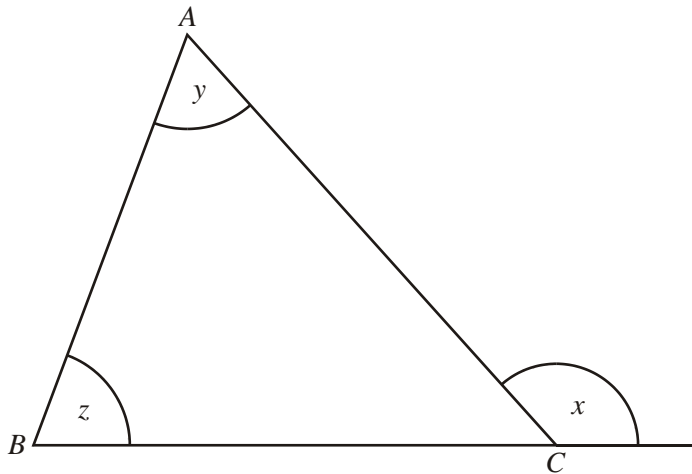
.....

.....

.....

(Total 2 marks)

2. ABC is a triangle.



Prove that the exterior angle at C , x , is equal to the sum of the opposite interior angles, z and y .

.....

.....

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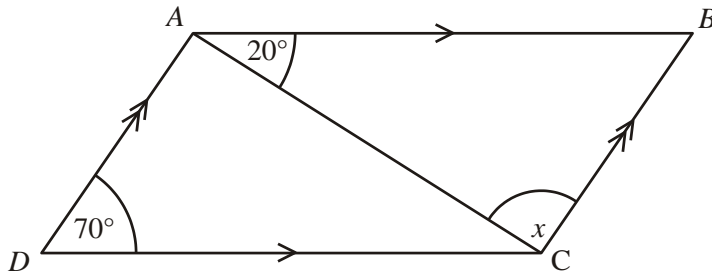
.....

.....

.....

(Total 2 marks)

3. The diagram shows a parallelogram $ABCD$.
 Angle $BAC = 20^\circ$
 Angle $ADC = 70^\circ$



Not drawn accurately

- (a) Show that angle x is a right angle.

.....

(2)

- (b) The area of the triangle ADC is 8.4 cm^2 .

Work out the area of the parallelogram.

.....

Answer cm^2

(2)

(Total 4 marks)

Success:

Target: