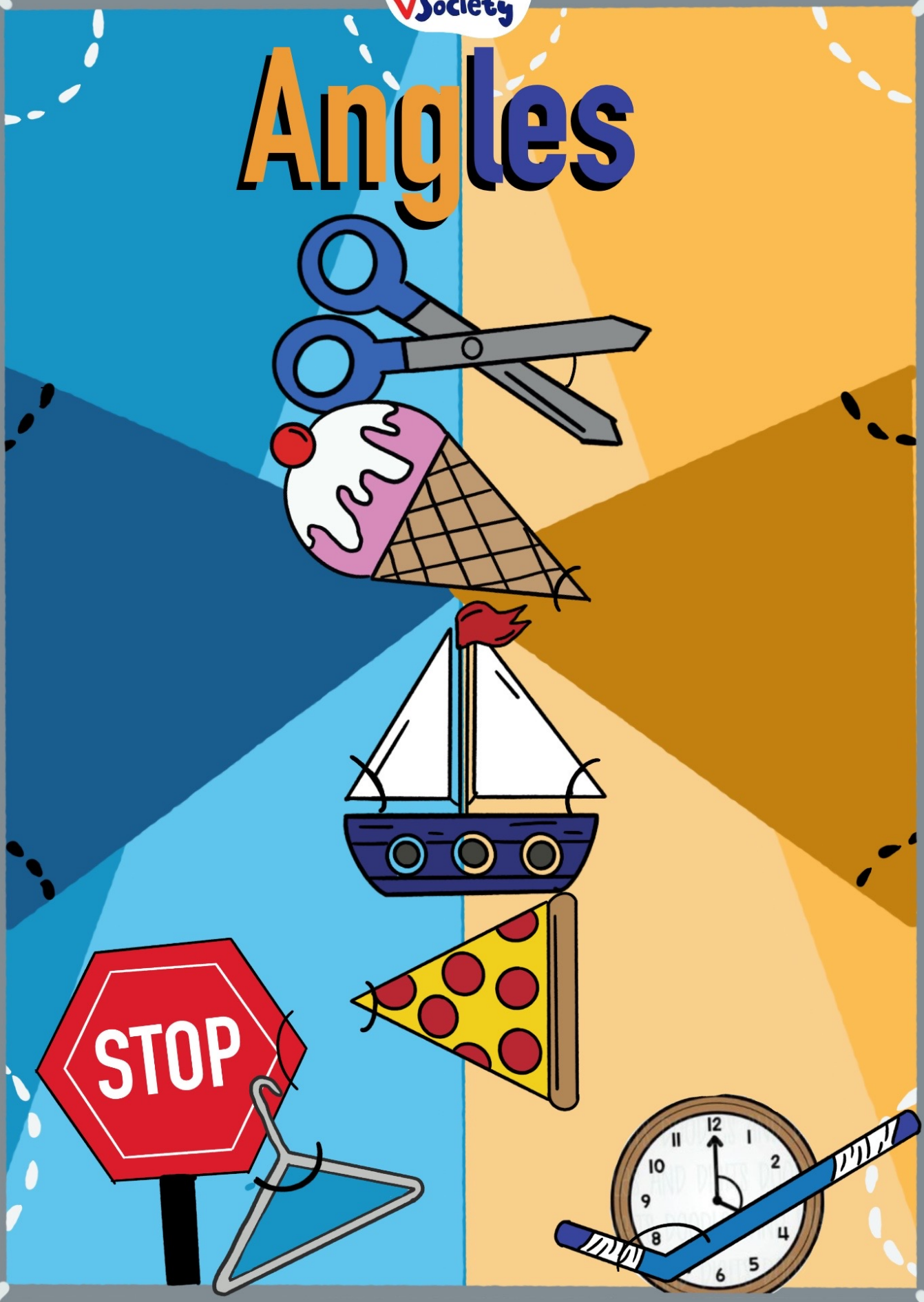
The Maths Society

Angles



1.

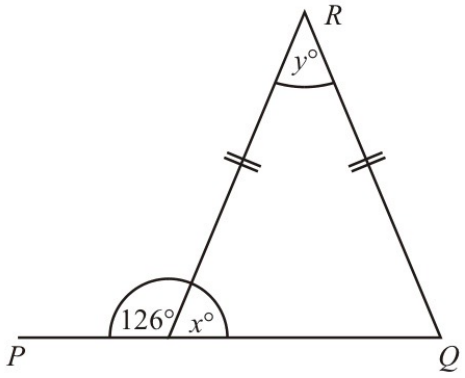


Diagram **NOT** accurately drawn

PQ is a straight line.

(a) Work out the size of the angle marked $x°$.

54 °

(1)

(b) (i) Work out the size of the angle marked $y°$.

72 °

(ii) Give reasons for your answer.

PQ is straight line so the angle in straight line is 180 and in triangle outside angle is equal to the sum of the opposite side of angle of that angle.

(3)

(4 marks)

2.

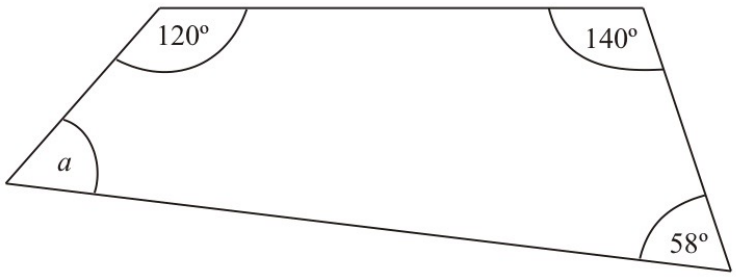


Diagram **NOT** accurately drawn

Work out the size of the angle *a*.

42 °

(2 marks)

3.

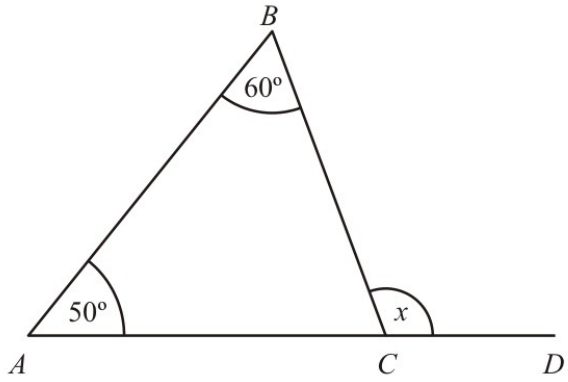


Diagram **NOT** accurately drawn

In the diagram, *ABC* is a triangle.
ACD is a straight line.
Angle *CAB* = 50°.
Angle *ABC* = 60°.

Work out the size of the angle marked *x*.

110 °

(2 marks)

4.

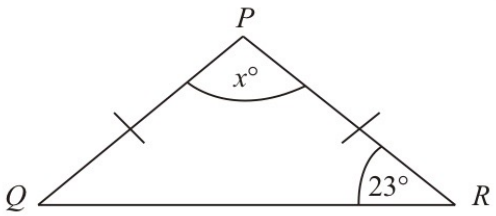


Diagram **NOT** accurately drawn

PQR is an isosceles triangle.

PQ = *PR*.
Angle *R* = 23°.

Work out the value of *x*.

x = 134

(2 marks)

5.

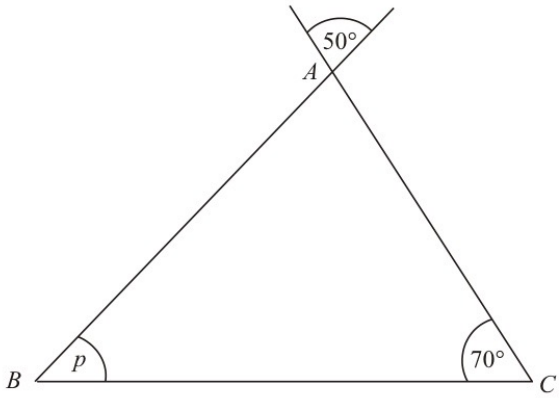


Diagram **NOT** accurately drawn

ABC is a triangle.

Work out the size of the angle marked *p*.

$p =$ 60 °

(2 marks)

6.

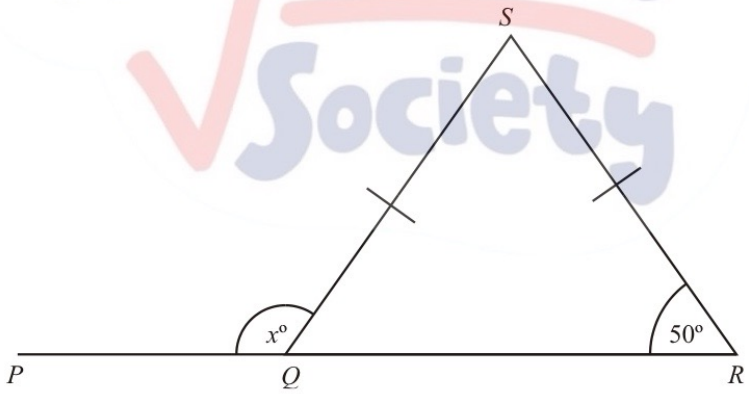


Diagram **NOT** accurately drawn

PQR is a straight line.
SQ = *SR*.

(i) Work out the size of the angle marked $x°$

130 °

(ii) Give reasons for your answer.

ΔQRS is isosceles and straight line has 180

(3 marks)

7.

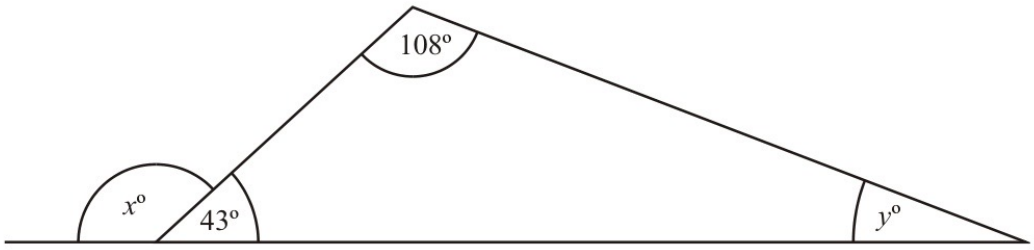


Diagram **NOT** accurately drawn

(a) Work out the value of x.

$x =$ 137

(1)

(b) Work out the value of y.

$y =$ 29

(2)

(3 marks)

8.

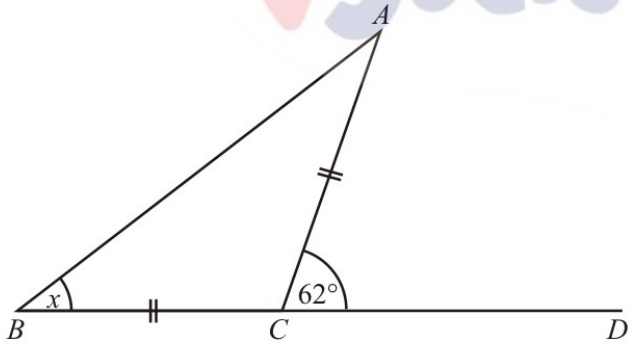


Diagram **NOT** accurately drawn

Triangle ABC is isosceles, with $AC = BC$.

Angle $ACD = 62^0$.

BCD is a straight line.

Work out the size of angle x.

$x =$ 31 ^{0}

(2 marks)

9.

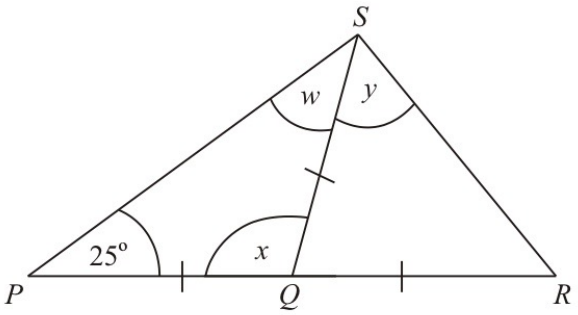


Diagram **NOT** accurately drawn

PQR is a straight line.

PQ = *QS* = *QR*.

Angle *SPQ* = 25°.

(a) (i) Write down the size of angle *w*.

25 .....°

(ii) Work out the size of angle *x*.

130 .....°

(2)

(b) Work out the size of angle *y*.

65 .....°

(2)

(4 marks)

10.

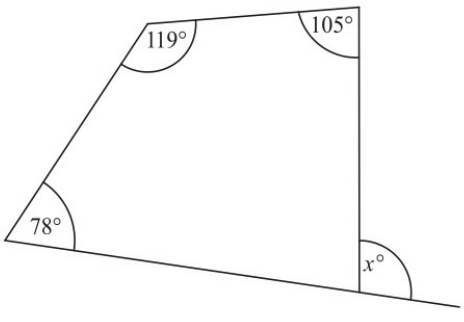


Diagram **NOT** accurately drawn

Work out the value of *x*.

x = 122 .....

(3 marks)

11.

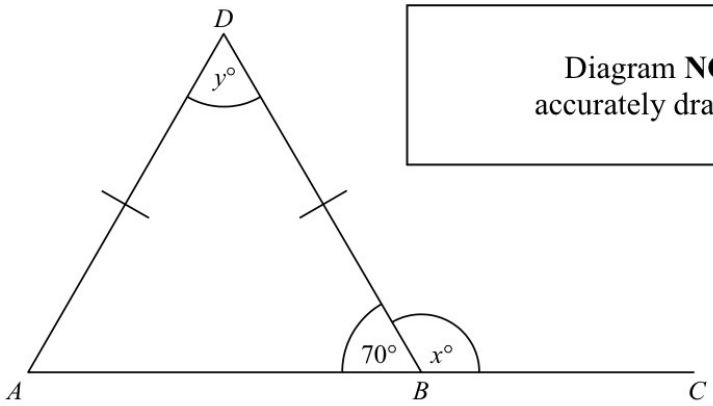


Diagram **NOT** accurately drawn

ABD is a triangle. *ABC* is a straight line.
Angle *ABD* = 70°.
AD = *BD*.

(a) (i) Work out the value of *x*.

x = 110

(ii) Give a reason for your answer.

ABC is straight line which has 180°

(2)

(b) (i) Work out the value of *y*.

y = 40

(ii) Give a reason for your answer.

△ABD is issoceles so the two angle are the same.

(3)

(5 marks)

12.

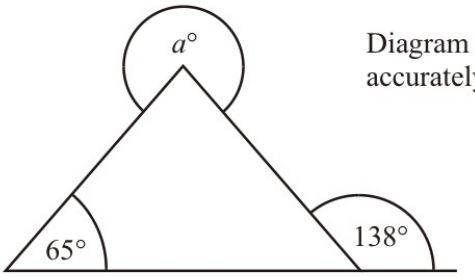


Diagram **NOT** accurately drawn

Work out the value of *a*.

a = 287

(3 marks)

13.

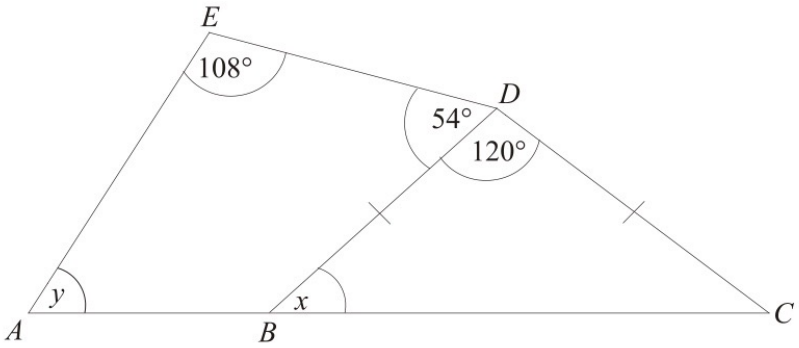


Diagram **NOT** accurately drawn

In the diagram, ABC is a straight line and $BD = CD$.

(a) Work out the size of angle x.

20 .....°

(2)

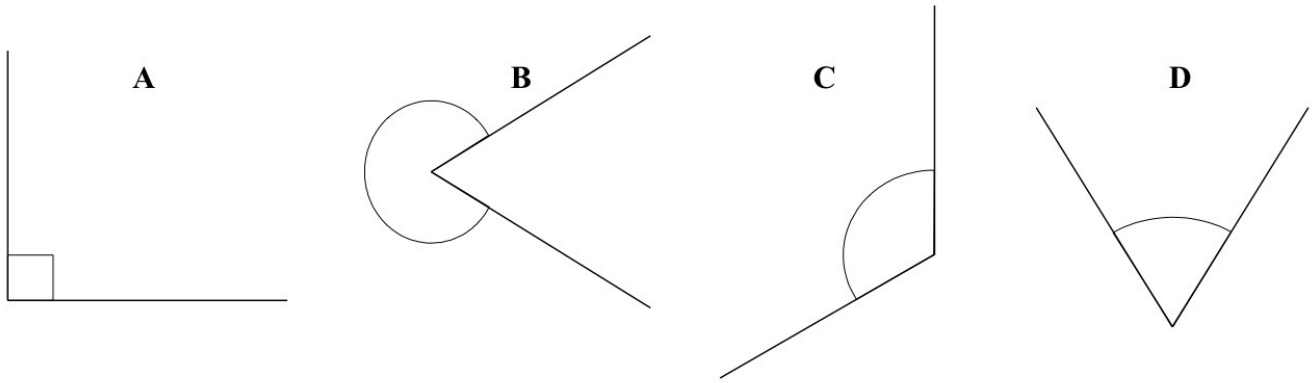
(b) Work out the size of angle y.

48 .....°

(3)

(5 marks)

1 Here are four angles A, B , C and D.



(a) Measure the size of angle C.

..... °

(b) Match the angle mathematical name to the angle.

Mathematical Name	Angle
Acute Angle	D
Obtuse Angle	C
Right Angle	A
Reflex Angle	B

(Total for question 7 is 3 marks)

2 In the space below draw an angle of 60°
Label the angle *A*.

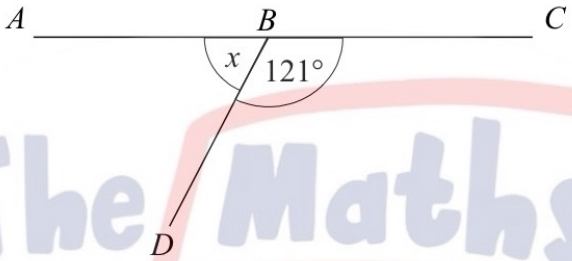
(Total for question 2 is 1 mark)

3 In the space below draw an angle of 110°
Label the angle *B*.

(Total for question 3 is 1 mark)

Diagrams are NOT accurately drawn, unless otherwise indicated.

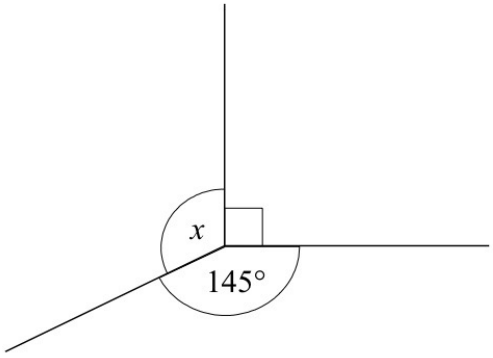
4 *ABC* is a straight line. Work out the size of the angle marked *x*.



59 °

(Total for question 4 is 2 marks)

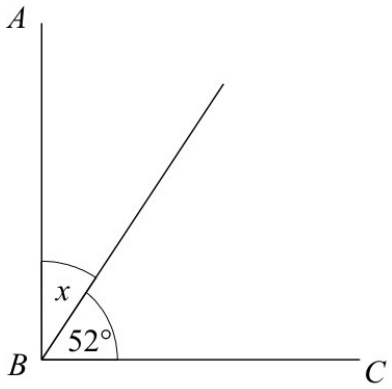
5 Work out the size of the angle marked *x*.



125 °

(Total for question 5 is 2 marks)

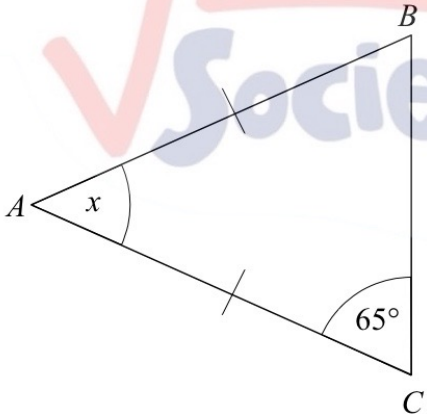
6 *AB* and *BC* are perpendicular lines. Work out the size of the angle marked *x*.



38 °

(Total for question 6 is 2 marks)

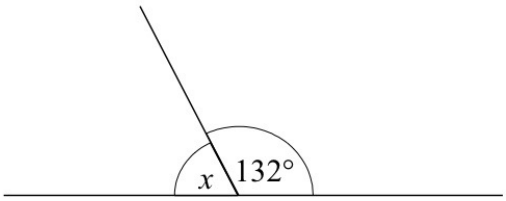
7 *ABC* is an isosceles triangle Work out the size of the angle marked *x*.



50 °

(Total for question 7 is 2 marks)

8



(a) Work out the size of the angle marked x.

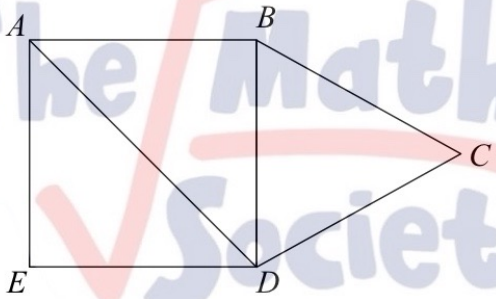
48 °

(b) Give a reason for your answer.

Straight line has 180°

(Total for question 8 is 2 marks)

9 The diagram shows a square $ABDE$ and an equilateral triangle BCD.



(a) Write down the size of angle ABD

90 °

(b) Write down the size of angle BCD

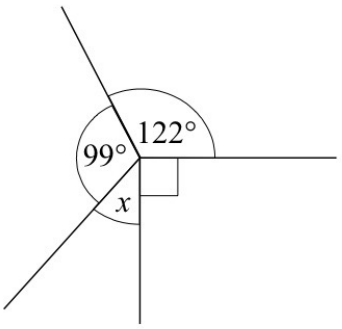
(c) Find the size of angle ADC

60 °

105 °

(Total for question 9 is 4 marks)

10



(a) Work out the size of the angle marked x.

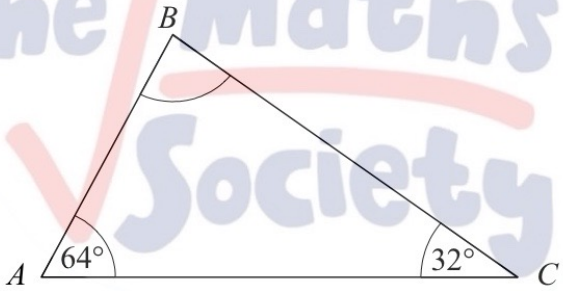
41 °

(b) Give a reason for your answer.

The whole circle has 360°

(Total for question 10 is 2 marks)

11



(a) Work out the size of the angle ABC.

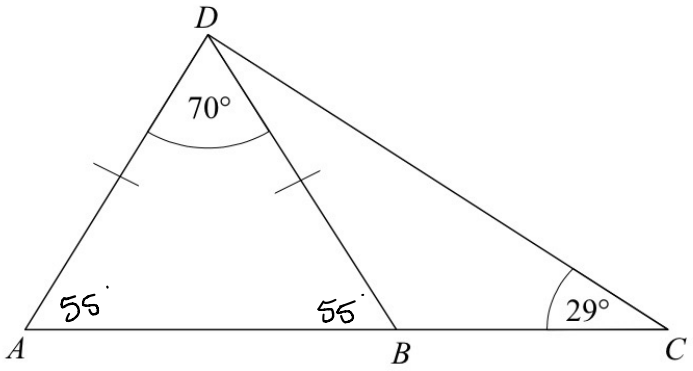
84 °

(b) Give a reason for your answer.

Triangle has 180°

(Total for question 11 is 2 marks)

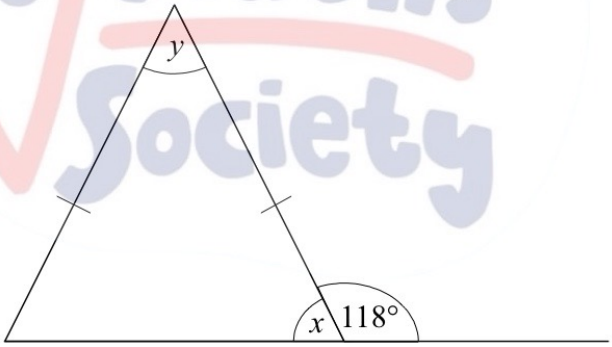
12 *ABC* is a straight line. Work out the size of the angle *BDC*.



26 °

(Total for question 12 is 4 marks)

13



(a) Work out the size of the angle marked *x*.

62 °

(b) Work out the size of the angle marked *y*.

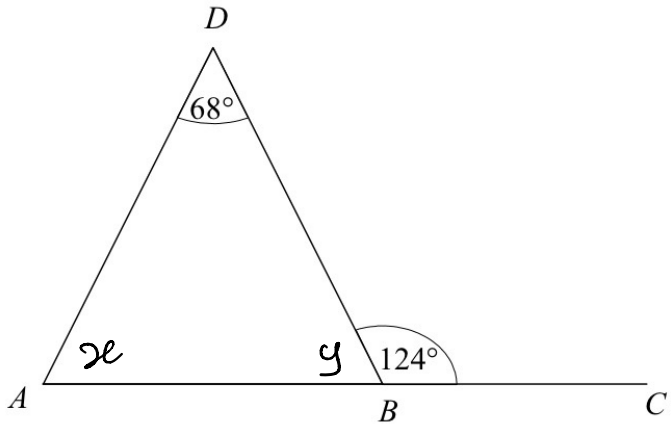
56 °

(c) Give reasons for your answer.

the angle in straight line is 180 and in triangle outside angle is equal to the sum of the opposite side of angle of that angle.

(Total for question 13 is 3 marks)

14 *ABC* is a straight line.



Show that *ABD* is an isosceles triangle

$y = 180 - 124 = 56°$

$x + 68 = 124$

$x = 124 - 68 = 56°$

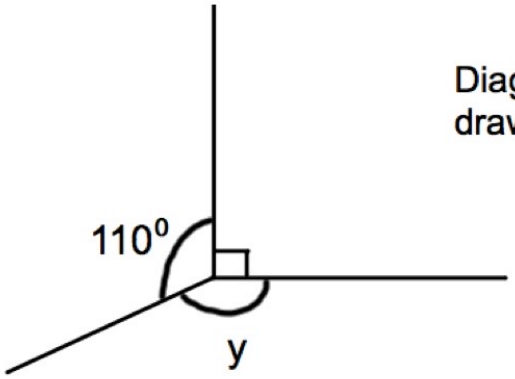
So, $x = y$

$\therefore AD = BD$

$\triangle ABD$ is isosceles

(Total for question 14 is 4 marks)

1.



(a) (i) Work out the size of the angle marked y.

160 °

(ii) Give a reason for your answer.

The whole circle is 360°

(2)

(b) (i) Work out the size of the angle marked w.

59 °

(ii) Give a reason for your answer.

Angle in straight line is 180°

(2)

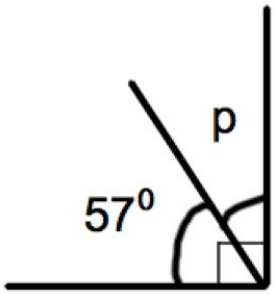


Diagram not drawn accurately

(c) (i) Work out the size of the angle marked p.

.....33.....°

(ii) Give a reason for your answer.

.....The right angle is 90.....

.....

(2)

---

2. Shown below is a quadrilateral.

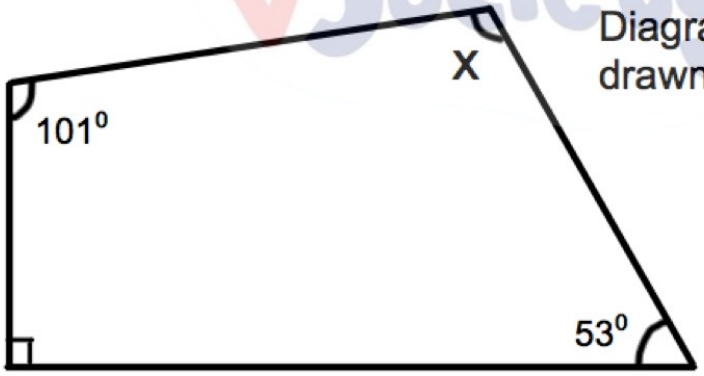


Diagram not drawn accurately

Work out the size of the angle marked x.

.....116.....°

(2)

3. Shown is a right angled triangle.

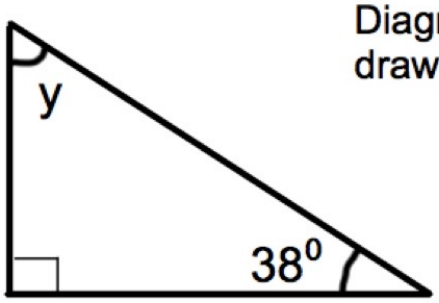


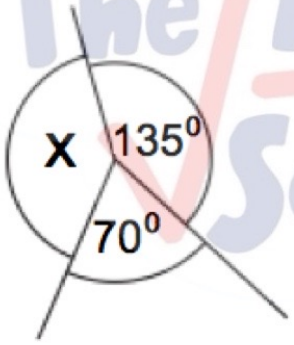
Diagram not drawn accurately

Work out the size of angle y.

52 °

(2)

4.



Not drawn accurately

(a) Work out the size of the angle marked x.

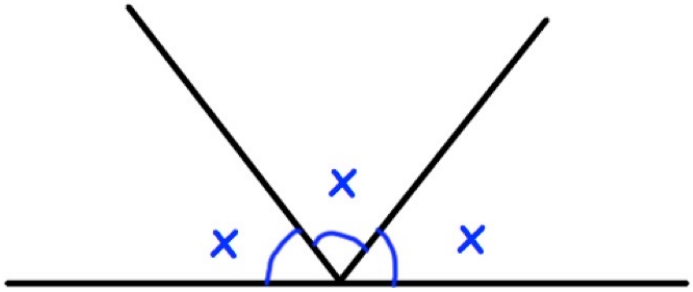
155 °

(b) Give a reason for your answer.

The whole circle is 360°

(2)

5.

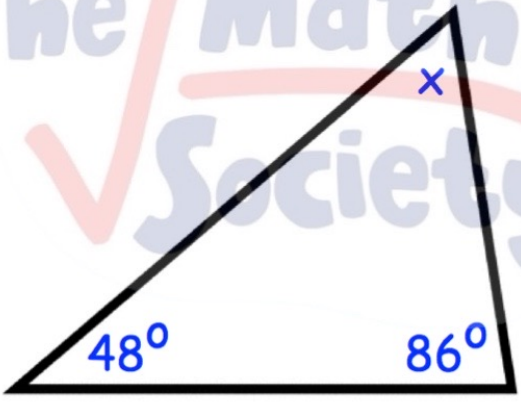


Work out the size of x.

60 °

(2)

6.

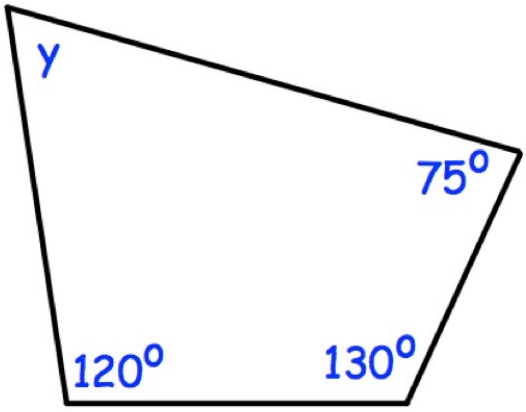


Work out the size of angle x.

46 °

(2)

7. Shown below is a quadrilateral.

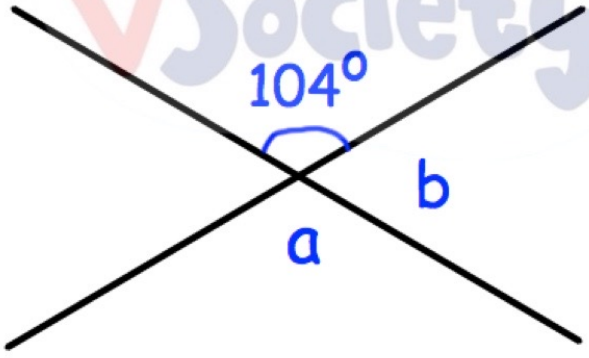


Work out the size of angle y.

35 °

(2)

8.



(a) Work out the size of angle a.

104 °

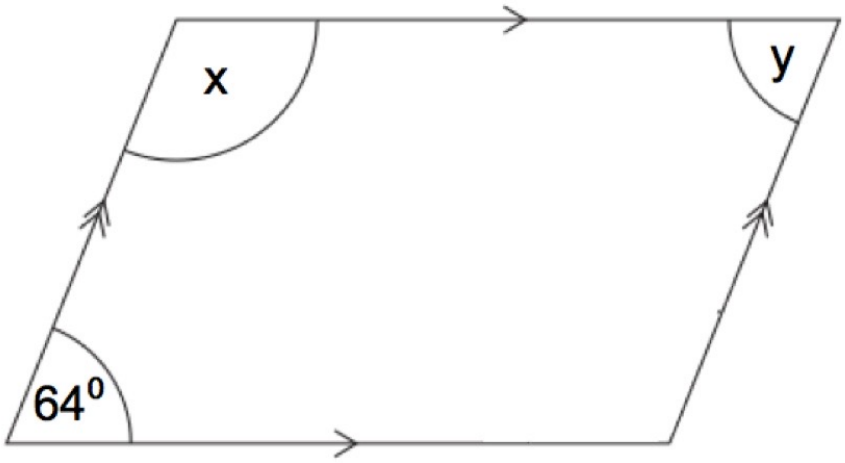
(1)

(a) Work out the size of angle b.

76 °

(1)

9.



The diagram above shows a parallelogram.

(a) Work out the size of the angle marked x.

116 °

(b) Work out the size of the angle marked y.

64 °

(2)

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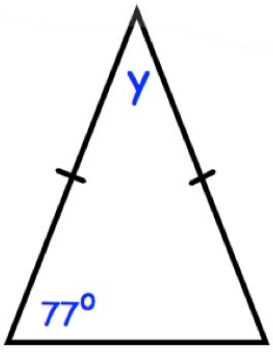
10. Shown below is an isosceles triangle.

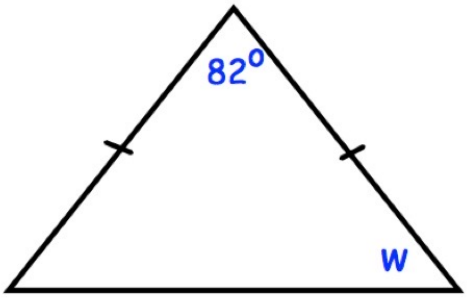


Work out the size of the angle marked y.

26 °

(2)

11. Shown below is an isosceles triangle.

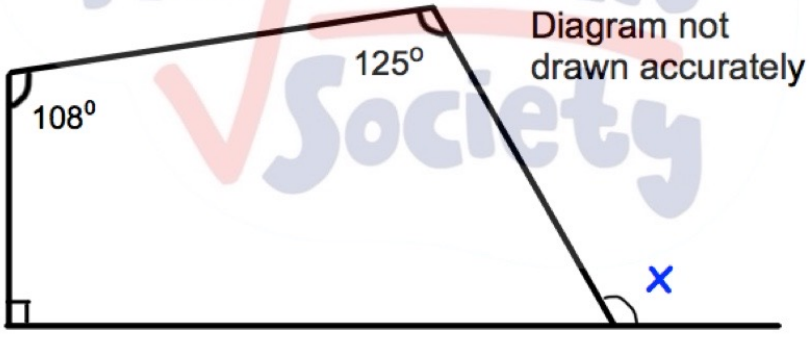


Work out the size of the angle marked w.

49 .....°

(2)

12.

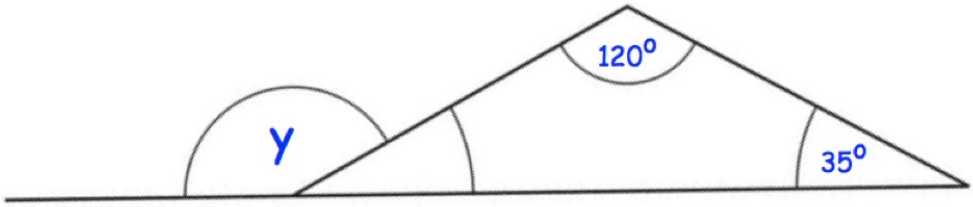


Work out the size of the angle marked x.

43 .....°

(3)

13.

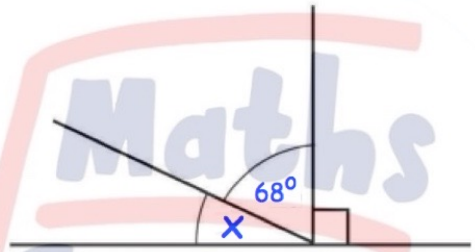


Work out the size of angle y.

155 °

(3)

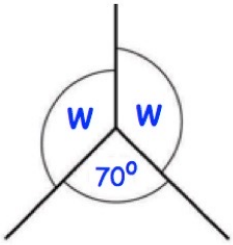
14.



(a) Calculate angle x.

22 °

(1)

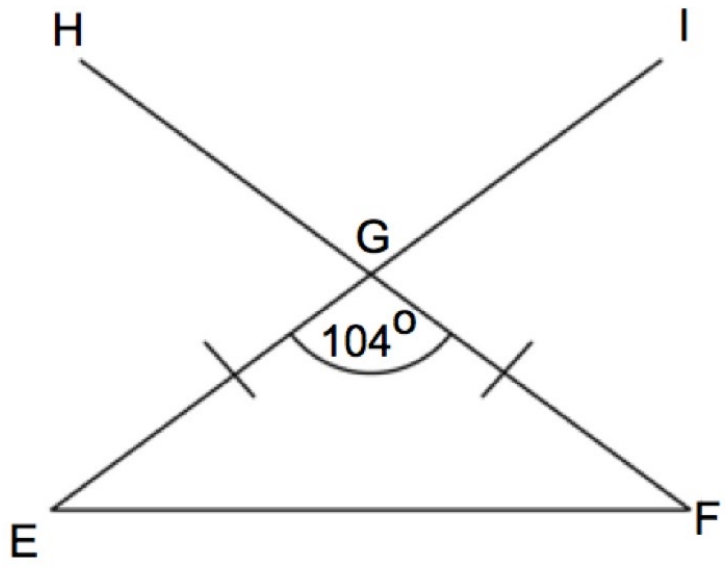


(b) Calculate angle w.

145 °

(1)

15.



Triangle EFG is an isosceles triangle.
Lines FGH and EGI are straight lines.
Angle EGF is 104^0.

(a) Find the size of angle HGI.

104 ....°

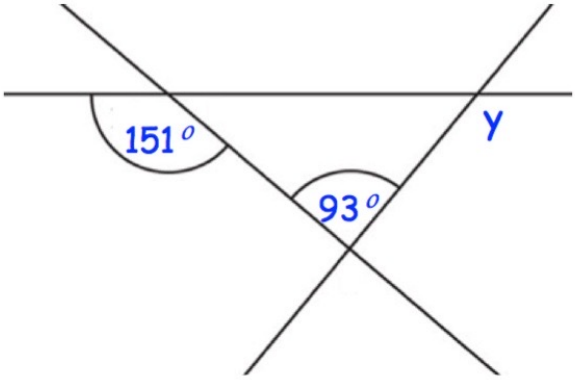
(1)

(b) Find the size of angle EFG.

38 ....°

(2)

16. Below are 3 straight lines.

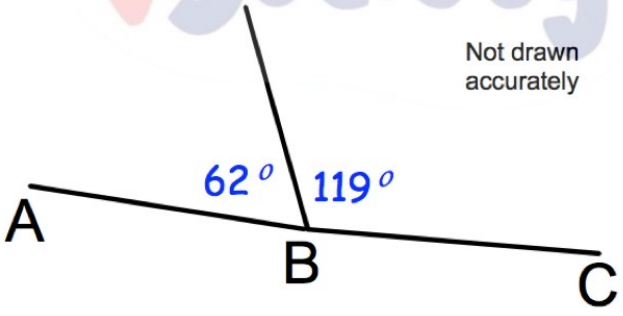


Find the size of angle y.

122

(3)

17. Bernard says AC is a straight line.



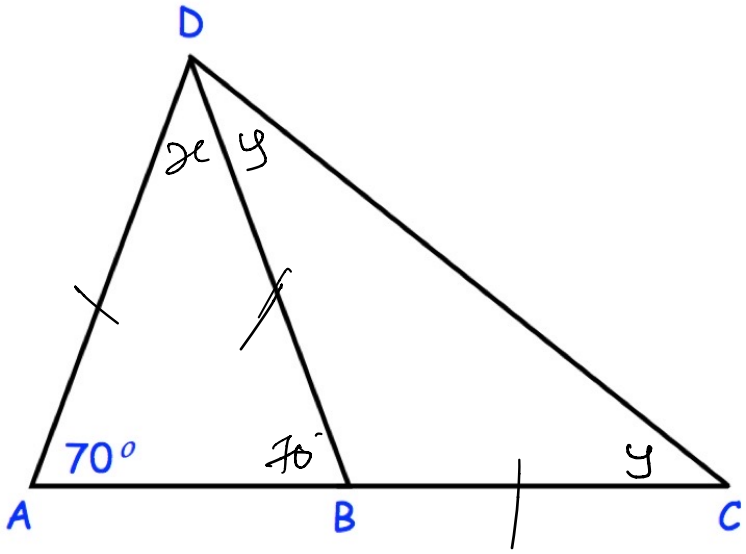
Is he correct?
Explain your answer.

No, he is not correct.

62 + 119 = 181 ≠ 180

(2)

20.



Triangles ABD and BCD are both isosceles.
AD = BD

AC is a straight line.

Is ADC a right angle?
Clearly explain your answer.

$x = 180 - 2(70) = 40$

$y = \frac{70}{2} = 35$

$x + y = 40 + 35 = 75 \neq 90$

So, $\angle ADC$ is not right angle. **(4)**

21.

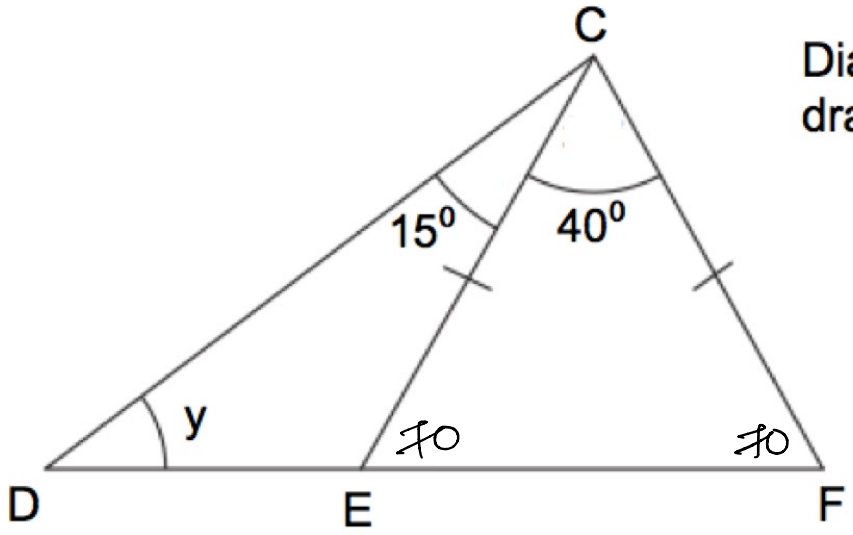


Diagram not drawn accurately

DEF is a straight line.
CE = CF.
Angle ECF is 40°.
Angle DCE is 15°.

Find the size of the angle marked y.

55 °

(4)