2.10 Angles: 30-minute Pack

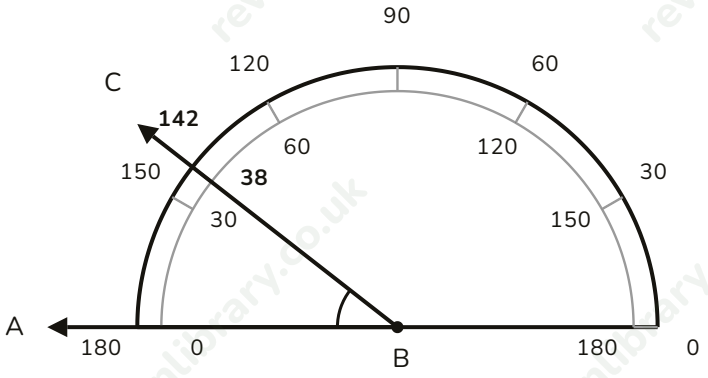
EDEXCEL 1MA1 · Calculator allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A protractor is placed with its centre on the vertex of angle ABC. The arm of the angle crosses the scale at 38 on the inner scale and 142 on the outer scale. By eye, angle ABC is clearly smaller than a right angle. Write down the size of angle ABC.

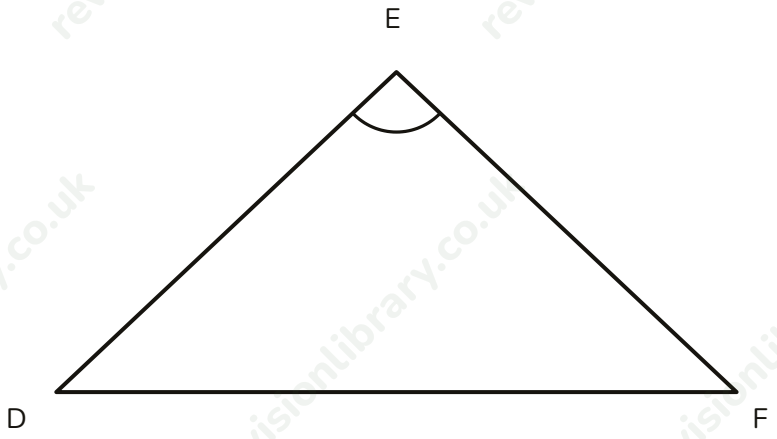


(Total for Question 1 is 2 marks)

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2 Triangle DEF is drawn below. An arc marks the angle at vertex E.

Write down, using three letters, the name of the angle marked with the arc.



(Total for Question 2 is 1 mark)

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3 Write down the answer to each question about angle facts.

(a) Write down the sum of the interior angles in any quadrilateral. **(1)**

.....

(b) Write down the sum of the exterior angles of any polygon. **(1)**

.....

(c) Write down the mathematical name given to two angles that add up to 90 degrees. **(1)**

.....

(d) Write down the mathematical name given to two angles that add up to 180 degrees. **(1)**

.....

(Total for Question 3 is 4 marks)

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4 For each statement, write True or False. If the statement is False, write down the correct mathematical name for the angle described.

(a) An angle of 95 degrees is acute. **(1)**

.....

(b) An angle of 180 degrees is called a straight-line angle. **(1)**

.....

(c) An angle of 15 degrees is obtuse. **(1)**

.....

(d) An angle of 300 degrees is reflex. **(1)**

.....

(Total for Question 4 is 4 marks)

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5 Circle the mathematical name for an angle of exactly 180 degrees.

- ☐ A) Reflex angle
- ☐ B) Straight-line angle
- ☐ C) Obtuse angle
- ☐ D) Right angle

(Total for Question 5 is 1 mark)

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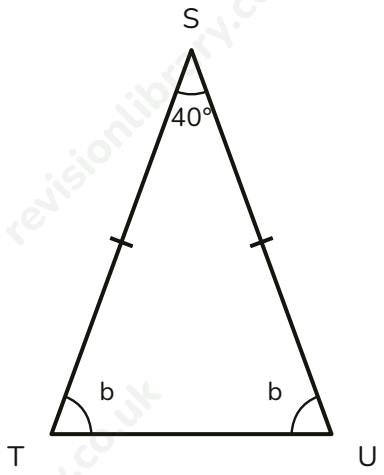
6 Work out the missing angle at a point. At a point three angles are 120 degrees, 95 degrees and x. Find x.

(Total for Question 6 is 1 mark)

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7 Triangle STU is isosceles, with ST = SU. Angle S = 40 degrees. Angles T and U are equal, each = b.

Diagram NOT accurately drawn



(a) Work out the size of angle b. **(2)**

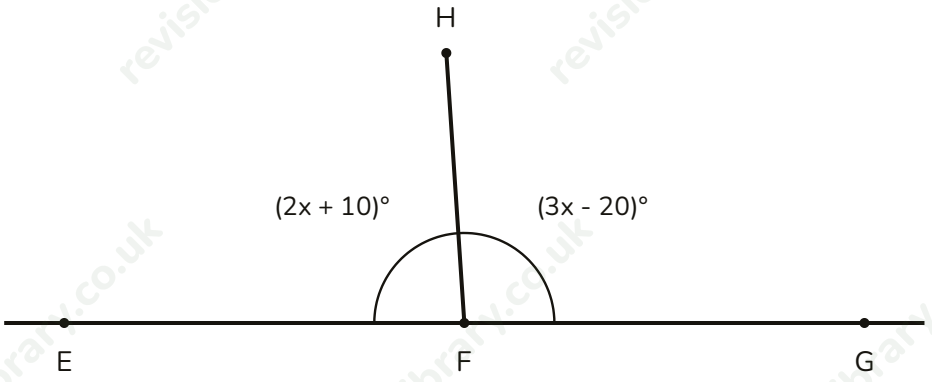
(b) Give a reason why angle T is equal to angle U. **(1)**

(Total for Question 7 is 3 marks)

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8 EFG is a straight line. Angle EFH = (2x + 10) degrees and angle HFG = (3x - 20) degrees.

Diagram NOT accurately drawn



(a) Show that x = 38. **(3)**

(b) Work out the size of angle HFG. **(1)**

.....

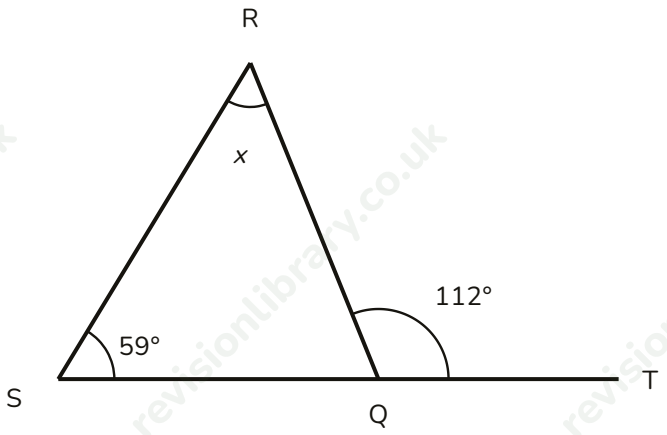
(Total for Question 8 is 4 marks)

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9 Triangle QRS is drawn. QT is a straight line through Q, so angle RQT = 112 degrees is an exterior angle of the triangle at Q. Angle S = 59 degrees. Angle R = x.

Work out the size of angle x.

Diagram NOT accurately drawn



(Total for Question 9 is 4 marks)

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Mark scheme · 2.10 Angles: 30-minute Pack

Question 1

identifies that angle ABC is acute (less than 90 degrees) oe **B1**

38 (degrees) cao **B1**

Answer: 38 degrees

Question 2

DEF or FED oe **B1**

Answer: Angle DEF (or FED)

Question 3

(a) 360 (degrees) cao **B1**

(a) Answer: 360 degrees

(b) 360 (degrees) cao **B1**

(b) Answer: 360 degrees

(c) complementary cao **B1**

(c) Answer: Complementary

(d) supplementary cao **B1**

(d) Answer: Supplementary

Question 4

(a) False, obtuse oe **B1**

(a) Answer: False - it is obtuse (95 degrees is greater than 90 degrees).

(b) True cao **B1**

(b) Answer: True

(c) False, acute oe **B1**

(c) Answer: False - it is acute (15 degrees is less than 90 degrees).

(d) True cao **B1**

(d) Answer: True

Question 5

B circled, cao **B1**

Answer: B) Straight-line angle

Question 6

145 degrees cao **B1**

Answer: 145 degrees

Question 7

(a) (180 - 40) / 2 **M1**

(a) b = 70 cao **A1**

(a) Answer: b = 70 degrees

(b) base angles of an isosceles triangle are equal oe **B1**

(b) Answer: Base angles of an isosceles triangle are equal.

Question 8

(a) 2x + 10 + 3x - 20 = 180 (angles on a straight line) oe **M1**

(a) 5x - 10 = 180 leading to 5x = 190 **M1**

(a) x = 38 shown correctly, cso **A1**

(a) Answer: x = 38

(b) 94 (degrees), ft their x **B1**

(b) Answer: 94 degrees

Question 9

180 - 112 to find the interior angle at Q **M1**

interior angle Q = 68 **A1**

180 - 68 - 59 **M1**

x = 53 cao **A1**

Answer: x = 53 degrees

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