4.4 Angles: Lines, Points and Triangles: Test Pack

Calculators not allowed · about 55 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A straight line has one angle of 110 degrees on one side. Write down the angle on the other side of the straight line.

(1)

---

2 Two straight lines cross and one small angle is 15 degrees. State the size of the adjacent angle that shares the straight line with the 15 degree angle.

(1)

---

3 Stretch question. A large triangle has angles 50 degrees and 60 degrees. On the side between these angles a smaller triangle is attached sharing that side so that the two triangles together form a quadrilateral. The angle at the shared vertex in the smaller triangle next to the 60 degree angle is 40 degrees and the angle at the shared vertex next to the 50 degree angle is 20 degrees. Find the remaining interior angle of the smaller triangle.

(4)

© Revision Library | revisionlibrary.co.uk

4 Four angles meet at a point. Three of them are 26°, 57° and 90°. Work out the fourth angle. Give a reason for your answer.

(3)

---

5 The angles of a triangle are x°, 3x° and 2x°. Work out the value of x and the size of the largest angle.

(4)

---

6 Triangle ABC is isosceles with AB = AC. Angle ABC = 21°. Work out angle BAC.

(3)

---

7 Angles on a straight line meet at a point. One angle is 73°. Work out the other angle.

(2)

---

8 Triangle PQR is isosceles with PQ = PR. Angle QPR = 60°. Work out angle PQR.

(3)

© Revision Library | revisionlibrary.co.uk

9 Four angles meet at a point. Three of them are 60°, 69° and 90°. Work out the fourth angle. Give a reason for your answer.

(3)

---

10 On a straight line two adjacent angles are 2x degrees and 40 degrees. These two angles form the straight line. Solve for x.

(2)

---

11 Two straight lines cross. Two opposite angles are 3y° and (y + 20)°. Work out the value of y and the size of each of these angles.

(3)

---

12 Two angles in a triangle are 43° and 72°. Work out the third angle.

(2)

---

13 Two angles in a triangle are 89° and 61°. Work out the third angle.

(2)

© Revision Library | revisionlibrary.co.uk

14 Three angles meet on a straight line. Two of them are 69° and 43°. Work out the third angle.

(2)

---

15 At a point three adjacent angles are 4x degrees, 5x degrees and 3x degrees. Find x.

(2)

---

16 The three interior angles of a triangle are x degrees, 3x degrees and 5x degrees. Find x.

(2)

---

17 Triangle XYZ is isosceles with XY = XZ. Angle XYZ = (3x - 10) degrees and angle XZY = (x + 30) degrees. Find x and the size of angle YXZ.

(3)

---

18 The angles in a triangle are x degrees, x + 10 degrees and 50 degrees. Find x.

(2)

© Revision Library | revisionlibrary.co.uk

Mark scheme · 4.4 Angles: Lines, Points and Triangles: Test Pack

Question 1

70 degrees cao	B1

Answer: **70 degrees**

Question 2

165 degrees cao	B1

Answer: **165 degrees**

Question 3

recognises angles around the shared side add and uses triangle sum for large triangle to find third angle = 70	M1
uses fact that quadrilateral interior angles sum to 360 or alternative method to relate angles	M1
forms equation for smaller triangle angles: unknown + 40 + 20 = 180 or uses subtraction from 360 with other angles	M1
remaining angle = 120 degrees cao	A1

Answer: **120 degrees**

Question 4

360 - 26 - 57 - 90 or 360 - 173	M1
187° cao	A1
angles around a point add up to 360 degrees	B1

Answer: **187° (angles around a point add up to 360°)**

Question 5

6x = 180	M1
x = 30	A1
substitutes to find the largest angle	M1
90° cao	A1

Answer: **x = 30, largest angle 90°**

Question 6

angle ACB = 21° (base angles equal)	M1
180 - 2 x 21	M1
138° cao	A1

Answer: **138°**

Question 7

180 - 73	M1
107° cao	A1

Answer: **107°**

Question 8

180 - 60	M1
(120) ÷ 2	M1
60° cao	A1

Answer: **60°**

Question 9

360 - 60 - 69 - 90 or 360 - 219	M1
141° cao	A1
angles around a point add up to 360 degrees	B1

Answer: **141° (angles around a point add up to 360°)**

Question 10

sets up equation 2x + 40 = 180 or equivalent method	M1
x = 70 cao	A1

Answer: **70**

Question 11

3y = y + 20	M1
y = 10	A1
each angle is 30°	A1

Answer: **y = 10, angles are 30°**

Question 12

180 - 43 - 72 or 180 - 115	M1
65° cao	A1

Answer: **65°**

Question 13

180 - 89 - 61 or 180 - 150	M1
30° cao	A1

Answer: **30°**

Question 14

180 - 69 - 43 or 180 - 112	M1
68° cao	A1

Answer: **68°**

Question 15

forms equation 4x + 5x + 3x = 360	M1
x = 30 cao	A1

Answer: **30**

Question 16

uses x + 3x + 5x = 180 to form 9x = 180	M1
x = 20 cao	A1

Answer: **20**

Question 17

uses base angles equal (XY = XZ so angle XYZ = angle XZY): 3x - 10 = x + 30	M1
solves to x = 20, giving each base angle 50 degrees	M1
angle YXZ = 80 degrees cao	A1

Answer: **x = 20, angle YXZ = 80 degrees**

Question 18

forms equation x + (x+10) + 50 = 180 or equivalent	M1
x = 60 cao	A1

Answer: **60**

© Revision Library | revisionlibrary.co.uk