4.4 Angles: Lines, Points and Triangles: 1-hour Pack

Calculators not allowed · about 60 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Two straight lines cross. One of the angles formed is 52°. Write down the size of the angle opposite it and give a reason.

(2)

2 Three angles of a quadrilateral are 73°, 98° and 85°. Work out the fourth angle and say whether the quadrilateral could be a parallelogram.

(3)

3 In triangle ABC, angle A = 63° and angle B = 24°. Work out angle C. Give a reason for your answer.

(3)

4 Two straight lines cross. One of the angles formed is 58°. Write down the size of the angle opposite it and give a reason.

(2)

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5 Triangle PQR is isosceles with PQ = PR. Angle QPR = 54°. Work out angle PQR.

(3)

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6 Three angles meet on a straight line. Two of them are 75° and 28°. Work out the third angle.

(2)

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7 Three angles of a quadrilateral are 111°, 85° and 40°. Work out the fourth angle and say whether the quadrilateral could be a parallelogram.

(3)

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8 Triangle ABC is isosceles with AB = AC. Angle ABC = 26°. Work out angle BAC.

(3)

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9 Two straight lines cross. One of the angles formed is 19°. Write down the size of the angle opposite it and give a reason.

(2)

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10 Triangle PQR is isosceles with PQ = PR. Angle QPR = 66°. Work out angle PQR.

(3)

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

(4)

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12 A triangle has angles 25°, 25° and an unknown angle. Work out the unknown angle and name the type of triangle.

(3)

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13 Two angles on a straight line are (x + 10)° and (4x - 20)°. Work out the value of x.

(3)

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14 In triangle ABC, angle A = 50 degrees and angle B = 60 degrees. Work out angle C.

(2)

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15 Four angles meet at a point. Three of them are 42°, 26° and 90°. Work out the fourth angle. Give a reason for your answer.

(3)

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16 The angles in a triangle are x degrees, x + 20 degrees and 40 degrees. Find x.

(2)

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17 Two straight lines cross at O. One pair of vertically opposite angles is 4x degrees and (2x + 50) degrees. Find x, and hence find the size of these two angles.

(3)

---

18 Two straight lines cross. One angle is 63 degrees. State the vertically opposite angle.

(1)

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19 At a point, four angles are formed. Three of them are 90 degrees, 120 degrees and 80 degrees. Find the fourth.

(1)

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Mark scheme · 4.4 Angles: Lines, Points and Triangles: 1-hour Pack

Question 1

52°	B1
vertically opposite angles are equal	B1

Answer: **52° (vertically opposite angles are equal)**

Question 2

360 - 256	M1
104°	A1
parallelogram needs opposite angles equal; check pairs	B1

Answer: **104°; it cannot be a parallelogram**

Question 3

180 - 63 - 24	M1
93° cao	A1
angles in a triangle add up to 180 degrees	B1

Answer: **93° (angles in a triangle add up to 180°)**

Question 4

58°	B1
vertically opposite angles are equal	B1

Answer: **58° (vertically opposite angles are equal)**

Question 5

180 - 54	M1
(126) ÷ 2	M1
63° cao	A1

Answer: **63°**

Question 6

180 - 75 - 28 or 180 - 103	M1
77° cao	A1

Answer: **77°**

Question 7

360 - 236	M1
124°	A1
parallelogram needs opposite angles equal; check pairs	B1

Answer: **124°; it cannot be a parallelogram**

Question 8

angle ACB = 26° (base angles equal)	M1
180 - 2 x 26	M1
128° cao	A1

Answer: **128°**

Question 9

19°	B1
vertically opposite angles are equal	B1

Answer: **19° (vertically opposite angles are equal)**

Question 10

180 - 66	M1
(114) ÷ 2	M1
57° cao	A1

Answer: **57°**

Question 11

5x = 180	M1
x = 36	A1
substitutes to find the largest angle	M1
108° cao	A1

Answer: **x = 36, largest angle 108°**

Question 12

180 - 2 x 25	M1
130°	A1
isosceles	B1

Answer: **130°, isosceles**

Question 13

x + 10 + 4x - 20 = 180	M1
5x = 190 or equivalent	M1
x = 38 cao	A1

Answer: **x = 38**

Question 14

uses sum of angles in a triangle = 180 oe	M1
angle C = 70 degrees cao	A1

Answer: **70 degrees**

Question 15

360 - 42 - 26 - 90 or 360 - 158	M1
202° cao	A1
angles around a point add up to 360 degrees	B1

Answer: **202° (angles around a point add up to 360°)**

Question 16

forms equation x + x+20 + 40 = 180 or equivalent	M1
x = 60 cao	A1

Answer: **60**

Question 17

uses vertically opposite angles equal: 4x = 2x + 50	M1
solves to x = 25	M1
both angles = 100 degrees cao	A1

Answer: **x = 25, both angles = 100 degrees**

Question 18

63 degrees cao	B1

Answer: **63 degrees**

Question 19

70 degrees cao	B1

Answer: **70 degrees**

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