8.8 Geometry: Properties of Shapes and Angles (Year 6): 1-hour Pack

Calculators not allowed · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A regular hexagon has interior angles that are all the same. Calculate the size of one interior angle of a regular hexagon.

(2)

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2 A circle has a radius of 33 cm. What is its diameter?

Answer: ___ cm

(1)

---

3 An angle measures 274 degrees. Is it acute, obtuse or reflex?

Answer: ___

(1)

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4 2 identical circles are drawn in a straight row, touching each other. Each circle has a radius of 13 cm.

How long is the whole row?

Answer: ___ cm

(2)

---

5 2 identical circles are drawn in a straight row, touching each other. Each circle has a radius of 27 cm.

How long is the whole row?

Answer: ___ cm

(2)

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6 At 2 o'clock, what is the smaller angle between the hour hand and the minute hand?

Answer: ___ degrees

(2)

---

7 An angle measures 162 degrees. Is it acute, obtuse or reflex?

Answer: ___

(1)

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8 Two angles in a triangle are 39 degrees and 51 degrees.

What is the third angle?

Answer: ___ degrees

(1)

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9 Four angles meet at a point and add up to 360 degrees. Three of the angles are 67, 101 and 41 degrees.

What is the fourth angle?

Answer: ___ degrees

(2)

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10 The angles in a quadrilateral are in the ratio 2:3:4:5. Work out the size of the smallest angle.

(2)

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11 A circle has a diameter of 50 cm. What is its radius?

Answer: ___ cm

(1)

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12 2 identical circles are drawn in a straight row, touching each other. Each circle has a radius of 9 cm.

How long is the whole row?

Answer: ___ cm

(2)

---

13 Two angles in a triangle are 83 degrees and 35 degrees.

What is the third angle?

Answer: ___ degrees

(2)

---

14 An isosceles triangle has two equal angles of 68 degrees each.

What is the third angle?

Answer: ___ degrees

(2)

---

15 Two angles in a triangle are 77 degrees and 62 degrees.

What is the third angle?

Answer: ___ degrees

(2)

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16 An angle measures 257 degrees. Is it acute, obtuse or reflex?

Answer: ___

(1)

---

17 An angle measures 112 degrees. Is it acute, obtuse or reflex?

Answer: ___

(1)

---

18 Four angles meet at a point and add up to 360 degrees. Three of the angles are 91, 98 and 61 degrees.

What is the fourth angle?

Answer: ___ degrees

(2)

---

19 Angles on a straight line add up to 180 degrees. One angle is 112 degrees.

What is the other angle?

Answer: ___ degrees

(1)

---

20 A circle has a radius of 9 cm. What is its diameter?

Answer: ___ cm

(1)

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21 A circle has a radius of 14 cm. What is its diameter?

Answer: ___ cm

(1)

---

22 At 8 o'clock, what is the smaller angle between the hour hand and the minute hand?

Answer: ___ degrees

(2)

---

23 An angle measures 80 degrees. Is it acute, obtuse or reflex?

Answer: ___

(1)

---

24 An isosceles triangle has an angle of 126 degrees between its two equal sides.

What size is each of the other two angles?

Answer: ___ degrees

(2)

---

25 At 3 o'clock, what is the smaller angle between the hour hand and the minute hand?

Answer: ___ degrees

(2)

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26 An angle on a diagram is 201 degrees. What is the size of the angle needed to complete a full turn?

Answer: ___ degrees

(1)

---

27 4 identical circles are drawn in a straight row, touching each other. Each circle has a radius of 7 cm.

How long is the whole row?

Answer: ___ cm

(2)

---

28 A regular hexagon has six equal interior angles. Work out the size of one interior angle.

(2)

---

29 At 6 o'clock, what is the smaller angle between the hour hand and the minute hand?

Answer: ___ degrees

(2)

---

30 An angle measures 165 degrees. Is it acute, obtuse or reflex?

Answer: ___

(1)

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Mark scheme · 8.8 Geometry: Properties of Shapes and Angles (Year 6): 1-hour Pack

A correct answer earns full marks unless the question asks for working, a method, proof or explanation.

Question 1

Use (n-2)x180 = 4x180 = 720 or show sum of interior angles — **M1**

720/6 = 120 degrees cao — **B1**

Answer: **120 degrees**

Question 2

66 cm cao — **B1**

Answer: **66 cm**

Question 3

reflex cao — **B1**

Answer: **reflex**

Question 4

diameter 26 seen — **M1**

52 cm cao — **A1**

Answer: **52 cm**

Question 5

diameter 54 seen — **M1**

108 cm cao — **A1**

Answer: **108 cm**

Question 6

30 degrees for each hour — **M1**

60 degrees cao — **A1**

Answer: **60 degrees**

Question 7

obtuse cao — **B1**

Answer: **obtuse**

Question 8

90 degrees cao — **B1**

Answer: **90 degrees**

Question 9

209 seen — **M1**

151 degrees cao — **A1**

Answer: **151 degrees**

Question 10

Sum ratios = 14 and show 360 divided by 14 or equivalent working — **M1**

Smallest angle = 2 x (360/14) = 51 3/7 degrees or 51.428... degrees cao — **B1**

Answer: **51.4285714286 degrees**

Question 11

25 cm cao — **B1**

Answer: **25 cm**

Question 12

diameter 18 seen — **M1**

36 cm cao — **A1**

Answer: **36 cm**

Question 13

118 seen — **M1**

62 degrees cao — **A1**

Answer: **62 degrees**

Question 14

136 seen — **M1**

44 degrees cao — **A1**

Answer: **44 degrees**

Question 15

139 seen — **M1**

41 degrees cao — **A1**

Answer: **41 degrees**

Question 16

reflex cao — **B1**

Answer: **reflex**

Question 17

obtuse cao — **B1**

Answer: **obtuse**

Question 18

250 seen — **M1**

110 degrees cao — **A1**

Answer: **110 degrees**

Question 19

68 degrees cao — **B1**

Answer: **68 degrees**

Question 20

18 cm cao — **B1**

Answer: **18 cm**

Question 21

28 cm cao — **B1**

Answer: **28 cm**

Question 22

30 degrees for each hour — **M1**

120 degrees cao — **A1**

Answer: **120 degrees**

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Question 23

acute cao	B1

Answer: **acute**

Question 24

54 seen	M1
27 degrees cao	A1

Answer: **27 degrees**

Question 25

30 degrees for each hour	M1
90 degrees cao	A1

Answer: **90 degrees**

Question 26

159 degrees cao	B1

Answer: **159 degrees**

Question 27

diameter 14 seen	M1
56 cm cao	A1

Answer: **56 cm**

Question 28

Interior angle sum = (6 - 2) x 180 = 720 degrees, or 360 / 6 = 60 seen	M1
720 / 6 = 120 degrees cao	B1

Answer: **120 degrees**

Question 29

30 degrees for each hour	M1
180 degrees cao	A1

Answer: **180 degrees**

Question 30

obtuse cao	B1

Answer: **obtuse**

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