4.11 Circles: Circumference and Area: 1-hour Pack

Calculators not allowed · about 60 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

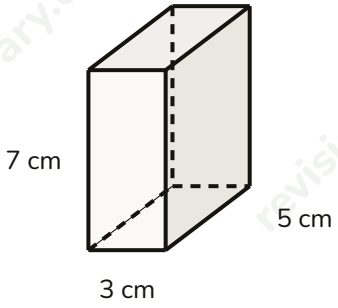
1 Find the area of the ring between two concentric circles. The outer radius is 10 cm and the inner radius is 6 cm. Give your answer to 1 decimal place. Use π = 3.14.

(3)

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2 A cuboid measures 3 cm by 5 cm by 7 cm. Work out its volume.

Diagram NOT accurately drawn



(2)

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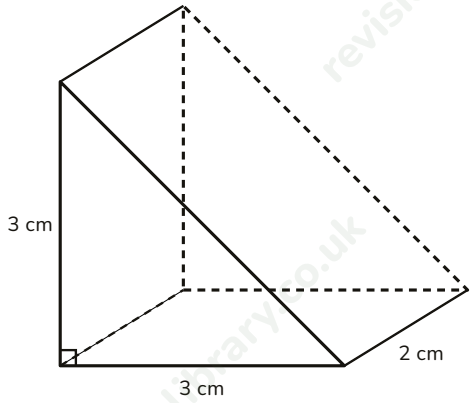
3 The circumference of a circle is 81.64 cm. Work out the radius. Use π = 3.14.

(3)

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4 A triangular prism has a right-angled triangle for its cross-section, with base 3 cm and height 3 cm. The prism is 2 cm long. Work out its volume.

Diagram NOT accurately drawn

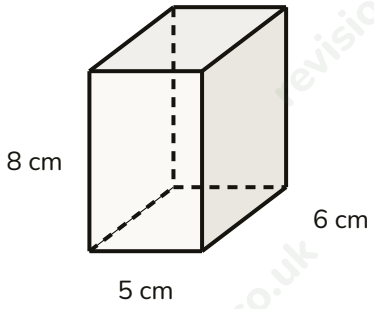


(3)

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5 A cuboid measures 5 cm by 6 cm by 8 cm. Work out its volume.

Diagram NOT accurately drawn



(2)

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6 The area of a circle is 615.44 cm². Work out its radius. Use π = 3.14.

(3)

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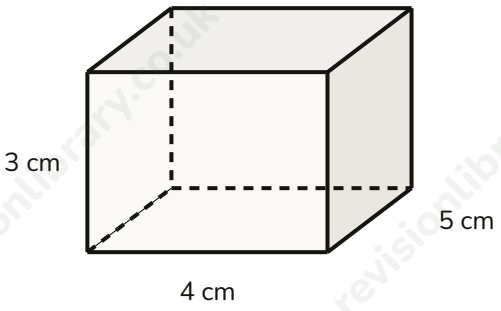
7 A circular table top has diameter 70 cm. Work out its area. Use π = 3.14.

(3)

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8 A cuboid measures 4 cm by 5 cm by 3 cm. Work out its volume.

Diagram NOT accurately drawn



(2)

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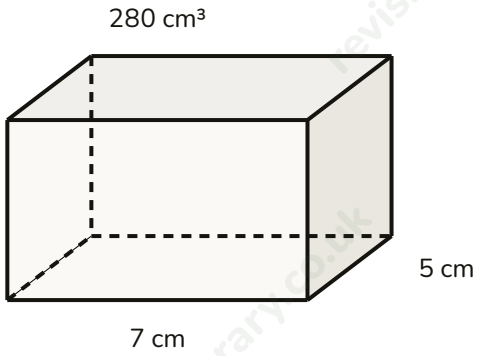
9 The circumference of a circle is 12.56 cm. Work out the radius. Use π = 3.14.

(3)

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10 A cuboid has volume 280 cm³. Its length is 7 cm and its width is 5 cm. Work out its height.

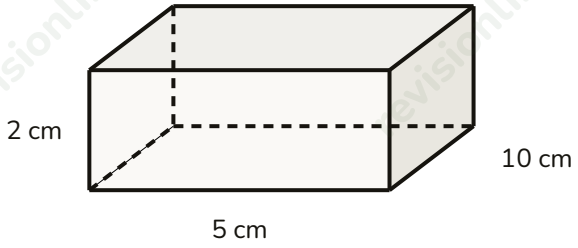
Diagram NOT accurately drawn



(3)

11 A cuboid measures 5 cm by 10 cm by 2 cm. Work out its volume.

Diagram NOT accurately drawn



(2)

12 A circular pond has radius 7 m. A fence is built right around the edge. Work out the length of the fence. Use π = 3.14.

(2)

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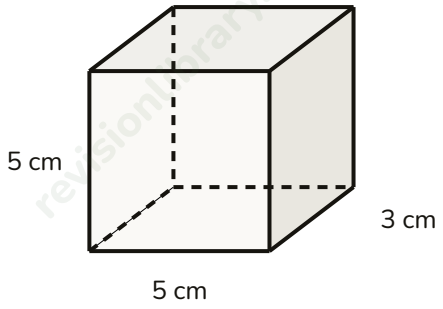
13 The circumference of a circle is 43.96 cm. Work out the radius. Use π = 3.14.

(3)

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14 A cuboid measures 5 cm by 3 cm by 5 cm. Work out its volume.

Diagram NOT accurately drawn



(2)

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15 A quarter circle has radius 20 cm. Work out its area in terms of π.

(2)

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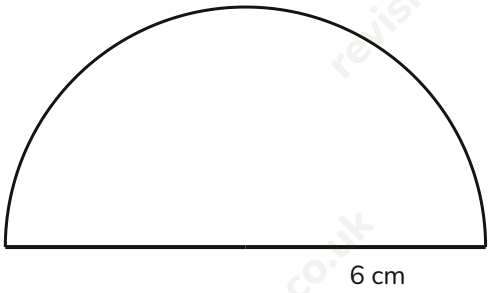
16 A circular pond has diameter 14 m. Work out its area. Give your answer to 1 decimal place.

(2)

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17 Calculate the area of a semicircle with radius 6 cm. Give your answer in terms of π and as a decimal to 1 decimal place.

Diagram NOT accurately drawn



(2)

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18 A circle has radius 6 cm. Give its circumference in terms of π.

(2)

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19 Write down the formula for the area of a circle in terms of its radius r.

(1)

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20 A circle has radius 9 cm. Calculate its area. Give your answer in terms of π.

(1)

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Mark scheme · 4.11 Circles: Circumference and Area: 1-hour Pack

Question 1

find outer area = π x 10^2 = 314.0 and inner area = π x 6^2 = 113.04	M1
subtract inner from outer	M1
201.0 cm² cao	A1

Answer: **201.0 cm^2**

Question 2

3 x 5 x 7	M1
105 cm³ cao	A1

Answer: **105 cm^3**

Question 3

81.64 = 3.14 x d or 2 x 3.14 x r	M1
81.64 ÷ 3.14 = 26 (diameter)	M1
13 cm cao	A1

Answer: **13 cm**

Question 4

cross-section area 1/2 x 3 x 3	M1
x 2	M1
9 cm³ cao	A1

Answer: **9 cm^3**

Question 5

5 x 6 x 8	M1
240 cm³ cao	A1

Answer: **240 cm^3**

Question 6

615.44 = 3.14 x r^2	M1
r^2 = 196	M1
14 cm cao	A1

Answer: **14 cm**

Question 7

radius 35	M1
3.14 x 35^2	M1
3846.5 cm² cao	A1

Answer: **3846.5 cm^2**

Question 8

4 x 5 x 3	M1
60 cm³ cao	A1

Answer: **60 cm^3**

Question 9

12.56 = 3.14 x d or 2 x 3.14 x r	M1
12.56 ÷ 3.14 = 4 (diameter)	M1
2 cm cao	A1

Answer: **2 cm**

Question 10

7 x 5 = 35	M1
280 ÷ 35	M1
8 cm cao	A1

Answer: **8 cm**

Question 11

5 x 10 x 2	M1
100 cm³ cao	A1

Answer: **100 cm^3**

Question 12

2 x 3.14 x 7	M1
43.96 m cao	A1

Answer: **43.96 m**

Question 13

43.96 = 3.14 x d or 2 x 3.14 x r	M1
43.96 ÷ 3.14 = 14 (diameter)	M1
7 cm cao	A1

Answer: **7 cm**

Question 14

5 x 3 x 5	M1
75 cm³ cao	A1

Answer: **75 cm^3**

Question 15

1/4 x π x 20^2	M1
100 π cm^2 cao	A1

Answer: **100 π cm^2**

Question 16

use of area = π x r^2 with r = 7 m	M1
153.9 m² cao	A1

Answer: **153.9 m^2**

Question 17

correct method: area semicircle = (1/2) x π x r^2 with r = 6	M1
18pi cm^2 and 56.5 cm² cao	A1

Answer: **18pi cm^2; 56.5 cm^2**

Question 18

2 x π x 6	M1
12 π cm cao	A1

Answer: **12 π cm**

Question 19

A = π x r^2 oe cao	B1

Answer: **A = π r^2**

Question 20

81pi cao	B1

Answer: **81pi cm^2**

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