Name:

Exam Style Questions

Surface area of a sphere

Corbettmaths

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You may use tracing paper if needed

Guidance

1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

Revision for this topic

www.corbettmaths.com/contents

Video 313

1. Shown is a sphere with radius 8cm.

Calculate the surface area of the sphere.
Give your answer to 1 decimal place.

$4 \times \pi \times 8^2 = 804.247...$

804.2 .....cm²

(3)

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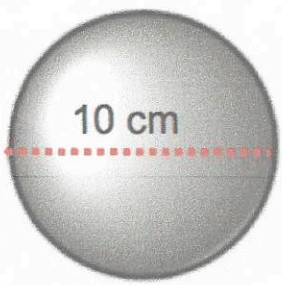
2. Shown is a sphere with diameter 10cm.



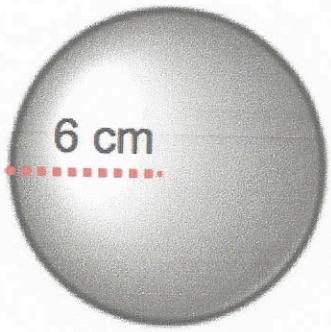
Calculate the surface area of the sphere.
Give your answer to 1 decimal place.

$4 \times \pi \times 5^2 = 314.159...$

314.2 .....cm²

(3)

3. Shown is a sphere with radius 6cm.



Calculate the surface area of the sphere.
Give your answer in terms of π.

$4 \times \pi \times 6^2 = 144\pi$

144π ..... cm^2

(3)

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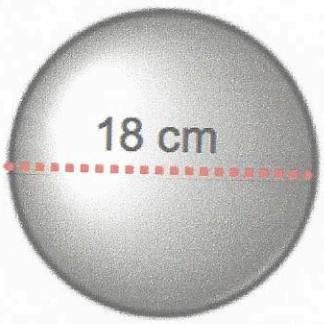
4. Shown is a sphere with diameter 18cm



Calculate the surface area of the sphere.
Give your answer in terms of π.

$4 \times \pi \times 9^2 = 324\pi$

324π ..... cm^2

(3)

5. A sphere has radius 5cm.
Calculate the surface area of the sphere.
Give your answer to 1 decimal place.

$4 \times \pi \times 5^2 = 314.159...$

314.2 ..... cm^2
(3)

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6. A sphere has diameter 3.2m.
Calculate the surface area of the sphere.
Give your answer to 1 decimal place.

$3.2 \div 2 = 1.6$

$4 \times \pi \times 1.6^2 = 32.1699...$

32.2 ..... m^2
(3)

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7. A sphere has radius 0.3cm.
Calculate the surface area of the sphere.
Give your answer to 1 decimal place.

$4 \times \pi \times 0.3^2 = 1.1309...$

1.1 ..... cm^2
(3)

8. A sphere has surface area 800cm².

Calculate the radius of the sphere, x.

$800 = 4\pi \times x^2$

$\div 4\pi \quad 4\pi$

$63.66... = x^2$

$\sqrt{63.66...} = 7.978...$

7.98 .....cm

(3)

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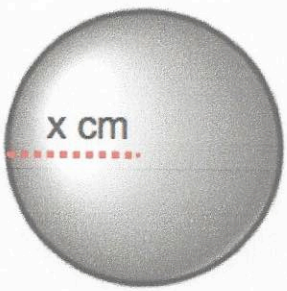
9. A sphere has surface area 3600π cm².



Calculate the radius of the sphere, x.

$3600\pi = 4\pi x^2$

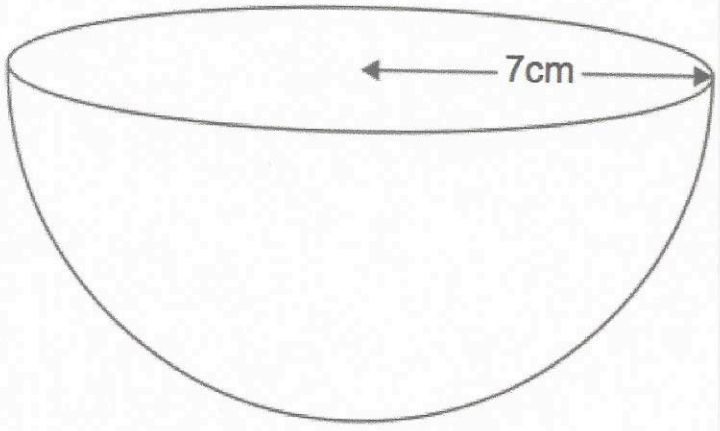
$900 = x^2$

$\sqrt{900} = 30$

30 .....cm

(3)

10. Shown below is a hemisphere.



Calculate the surface area of the hemisphere.

$2 \times \pi \times 7^2 = 98\pi$

$\pi \times 7^2 = 49\pi$ (+)

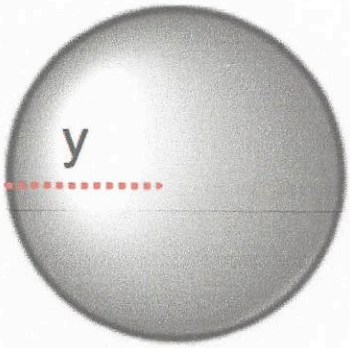
$147\pi = 461.8$

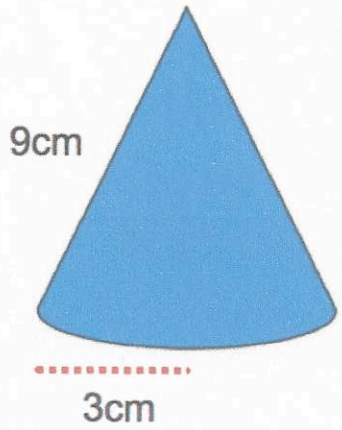
461.8 .....cm²

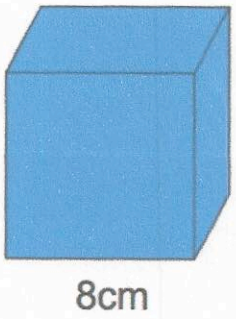
(4)

11. Shown below is a sphere, cone and cube.

The surface area of the sphere is equal to the sum the surface areas of the cone and cube.







Find y.

SA of cube = $8 \times 8 \times 6 = 384$

SA of cone = $\pi \times 3 \times 9 + \pi \times 3^2 = 113.097$ +

497.097

$4\pi x^2 = 497.097$

$x^2 = 39.557\ldots$

$x = \sqrt{39.557\ldots} = 6.3$

6.3 .....cm²

(6)