

SURFACE AREA OF A SPHERE

SKILLS QUESTIONS



- Q1. (a) This water walking ball has a diameter of 1.5 metres. What is the surface area of plastic required to make one ball?
(b) The adult version of this ball has a diameter of 2.7 metres. What is the area of plastic required to make it?

- Q2. These juggling balls are made of vinyl fabric in 4 colours - green, red, yellow and blue - stitched together.
(a) The radius of one juggling ball is 2.6 cm. Calculate the area of green vinyl fabric required for one juggling ball.
(b) A circus orders 35 pairs of juggling balls. Calculate the area of each vinyl fabric required to fill the order.



- Q3. This hollow children's ball has a diameter of 32 cm. Each black ball is painted with 8 yellow, 2 blue, 4 red, 3 purple and 1 white dots. Each dot has a diameter of 15 mm.
(a) Calculate the surface area (in cm^2) of the black plastic.
(a) Calculate the area (in mm^2) of one dot.
(b) Calculate the area (in cm^2) of each colour to make the ball.

- Q4. A hemi-spherical parachute has a diameter of 3 metres.
(a) Write a rule for the surface area of an open hemi-sphere.
(b) Find the area of the parachute.
(c) If it has a thickness of 0.5 mm, what is the volume of the very tightly packed parachute?
(d) Will the packed parachute fit into a backpack that measures 20cm by 20cm by 35cm?



ANSWERS

Q1. (a) 7.07 m^2
(b) 22.89 m^2

Q2. (a) 21.23 cm^2
(b) 1485.05 cm^2

Q3. (a) 3215.36 cm^2
(b) 706.5 mm^2
(c) Yellow 56.52 mm^2
Blue 14.13 mm^2
Red 28.26 mm^2
Purple 21.2 mm^2
White 7.07 mm^2

Q4. (a) $2\pi r^2$
(b) 14.13 m^2
(c) 0.007 m^3
(d) Backpack 0.014 m^3 , yes