**Volume and Surface Area of Spheres GREEN**

1) Calculate the volume and surface area of each of these spheres. Give your answers correct to 2 decimal places:

a) Radius 3cm b) Radius 6cm c) Diameter 20cm

d) Diameter 14cm e) Radius 3.5cm f) Diameter 4.5cm

2) A sphere fits exactly into an open cubical box of side 25cm. Calculate the following:

a) The surface area of the sphere

b) The volume of the sphere

3) A metal sphere of radius 15cm is melted down and recast into a solid cylinder of radius 6cm. Calculate the height of the cylinder.

4) A manufacturer is making cylindrical packaging for a sphere as shown. The curved surface area of the cylinder is made from card. Show that the area of the card is the same as the surface area of the sphere.

**Volume and Surface Area of Spheres AMBER**

1) Calculate the volume and surface area of each of these spheres. Give your answers correct to 2 decimal places:

a) Radius 3cm b) Radius 6cm c) Diameter 20cm

 V $=\frac{4}{3}×π×3³$

 $=$

 SA $=4×π×3²$

 $=$

d) Diameter 14cm e) Radius 3.5cm f) Diameter 4.5cm

2) A sphere fits exactly into an open cubical box of side 25cm. Calculate the following:

a) The surface area of the sphere

If it’s tricky, draw a piccy!

b) The volume of the sphere

3) A metal sphere of radius 15cm is melted down and recast into a solid cylinder of radius 6cm. Calculate the height of the cylinder.

Calculate the volume of the sphere first; this is the same as the volume of the cylinder.

4) A manufacturer is making cylindrical packaging for a sphere as shown. The curved surface area of the cylinder is made from card. Show that the area of the card is the same as the surface area of the sphere.

Start by calculating the surface area of the sphere in terms of the radius, r.

**Volume and Surface Area of Spheres RED**

1) Calculate the volume and surface area of each of these spheres. Give your answers correct to 2 decimal places:

a) Radius 3cm b) Radius 6cm c) Diameter 20cm

 V $=\frac{4}{3}×π×3³$ V $=\frac{4}{3}×π×10³$

 $=$ $=$

 SA $=4×π×3²$ SA $=4×π×10²$

 $=$ $=$

d) Diameter 14cm e) Radius 3.5cm f) Diameter 4.5cm

2) A sphere fits exactly into an open cubical box of side 25cm. Calculate the following:

a) The surface area of the sphere

If it’s tricky, draw a piccy!

b) The volume of the sphere

3) A metal sphere of radius 15cm is melted down and recast into a solid cylinder of radius 6cm. Calculate the height of the cylinder.

Calculate the volume of the sphere first; this is the same as the volume of the cylinder.

 V = $=\frac{4}{3}×π×15^{3}=$

4) A manufacturer is making cylindrical packaging for a sphere as shown. The curved surface area of the cylinder is made from card. Show that the area of the card is the same as the surface area of the sphere.

Start by calculating the surface area of the sphere in terms of the radius, r.

 SA $=4×π×r²=$