a)
A solid metal sphere has mass 235g.
The density of the metal is 7.78g/cm³.

Show that the surface area of this sphere is 46.9cm², correct to 3 significant figures.

[For a sphere with radius r, Volume $= \frac{4}{3}\pi r^3$ and Surface Area $= 4\pi r^2$]

What is the volume of the sphere?	$density = \dfrac{mass}{volume}$ $volume = \dfrac{mass}{density}$ $\dfrac{235}{7.78} = 30.205655527$
What is the radius of the sphere?	$\frac{4}{3}\pi r^3 = 30.205655527$ $r = \sqrt[3]{\dfrac{30.205655527 \times 3}{4\pi}}$ $r = 1.931967807$
What is the surface area of the sphere?	$4\pi r^2 = 46.903973378$ $= 46.9\text{cm}^2$

b)
A solid metal sphere has mass 480g.
The density of the metal is 8.93g/cm³.

Show that the surface area of this sphere is 68.9cm², correct to 3 significant figures.

[For a sphere with radius r, Volume $= \frac{4}{3}\pi r^3$ and Surface Area $= 4\pi r^2$]

What is the volume of the sphere?	$density = \dfrac{mass}{volume}$ $volume = \dfrac{mass}{density}$ $\dfrac{480}{8.93} = 53.751399776$
What is the radius of the sphere?	$\frac{4}{3}\pi r^3 = 53.751399776$ $r = \sqrt[3]{\dfrac{53.751399776 \times 3}{4\pi}}$ $r = 2.34117$
What is the surface area of the sphere?	

c)
A solid metal sphere has mass 650g.
The density of the metal is 12.7g/cm^3.

Show that the surface area of this sphere is 66.7cm^2, correct to 3 significant figures.

[For a sphere with radius r, Volume $= \frac{4}{3}\pi r^3$ and Surface Area $= 4\pi r^2$]

What is the volume of the sphere?	$density = \dfrac{mass}{volume}$ $volume = \dfrac{mass}{density}$ $\dfrac{650}{12.7} = 51.181102362$
What is the radius of the sphere?	
What is the surface area of the sphere?	

d)
A solid metal sphere has mass 800g.
The density of the metal is 7.3g/cm^3.

Show that the surface area of this sphere is 111cm^2, correct to 3 significant figures.

[For a sphere with radius r, Volume $= \frac{4}{3}\pi r^3$ and Surface Area $= 4\pi r^2$]

BACKWARD FADED MATHS