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| **Density, Mass and Volume** |
| **(a)** | **(b)** | **(c)** |
| A metal cube with side length $3 cm$ has a mass of $62.1 g$. Find the density of the metal in $g/cm^{3}$. | A solid cylinder has a radius of $5 cm$ and a height of $8 cm$. The density of the cylinder is $1.25 g/cm^{3}$. Calculate the mass of the cylinder in grams to 3 significant figures. | A spherical boulder has a radius of $1.2 m$. If the boulder has a mass of $15000 kg$, find its density in $kg/m^{3}$. Give your answer to 3 significant figures.  |
| **(d)** | **(e)** | **(f)** |
| A prism has a mass of $2.6 kg$ and a density of $1.3 kg/m^{3}$. If the prism has a cross sectional area of $0.8 m^{2}$, calculate the length of the prism. | A wooden cuboid has dimensions $8 cm$ by $4 cm$ by $x cm$. The cuboid has density $1.1 g/cm^{3}$ and mass $228.8 g$. Find the value of $x$. | A cube of side length $6 cm$ and mass $561.6 g$ has the same density as a cylinder of mass $1176 g$. If the radius of the cylinder is $3 cm$, find its height. |
| **(g)** | **(h)** | **(i)** |
| $120 g$ of aluminium and $380 g$ of copper are melted down and mixed together to form an alloy. Aluminium has density $2.7 g/cm^{3}$ and copper has density $8.9 g/cm^{3}$. Find the density of the alloy. | Melted chocolate has a density of $0.71 g/cm^{3}$ and milk has a density of $1.03 g/cm^{3}$. $50 ml$ of melted chocolate is mixed with $200 ml$ of warm milk to make a drink. Find the density of the drink in $g/cm^{3}$. | A toy is made of a metal hemisphere with a wooden cone on top. The hemisphere has a radius of $4 cm$. The cone also has a radius $4 cm$, a height of $10 cm$ and density $1.5 g/cm^{3}$. If the average density of the toy is $6.1 g/cm^{3}$, find the density of the metal. |