| a) <br> A solid metal sphere has surface area $452.39 \mathrm{~cm}^{2}$ to two decimal places, and mass 3 kg . <br> Show that the density of this sphere is $3.3 \mathrm{~g} / \mathrm{cm}^{2}$, correct to one decimal place. | a) <br> A solid metal sphere has surface area $452.39 \mathrm{~cm}^{2}$ to two decimal places, and mass 3 kg . <br> Show that the density of this sphere is $3.3 \mathrm{~g} / \mathrm{cm}^{2}$, correct to one decimal place. |
| :---: | :---: |
| b) <br> A solid plastic cube has density $1.5 \mathrm{~g} / \mathrm{cm}^{3}$ and a surface area of $54 \mathrm{~cm}^{2}$. <br> Show that the mass of the cube is 40.5 g . | b) <br> A solid plastic cube has density $1.5 \mathrm{~g} / \mathrm{cm}^{3}$ and a surface area of $54 \mathrm{~cm}^{2}$. <br> Show that the mass of the cube is 40.5 g . |
| c) <br> A car sets off on a journey of 180 miles at 9 am . <br> It travels at an average speed of 66 mph for the first 90 minutes. <br> Show that if they want to arrive by 12 noon, they must travel at a minimum speed of 54 mph . | c) <br> A car sets off on a journey of 180 miles at 9 am . <br> It travels at an average speed of 66 mph for the first 90 minutes. <br> Show that if they want to arrive by 12 noon, they must travel at a minimum speed of 54 mph . |
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