1) Use the information in the table to answer the questions below

<table>
<thead>
<tr>
<th>Planet</th>
<th>Image</th>
<th>Mass (kg)</th>
<th>Distance to Sun (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jupiter</td>
<td>![Jupiter Image]</td>
<td>$1.9 \times 10^{27}$</td>
<td>$7.78 \times 10^8$</td>
</tr>
<tr>
<td>Mercury</td>
<td>![Mercury Image]</td>
<td>$3.3 \times 10^{23}$</td>
<td>$5.79 \times 10^7$</td>
</tr>
<tr>
<td>Saturn</td>
<td>![Saturn Image]</td>
<td>$5.69 \times 10^{26}$</td>
<td>$1.43 \times 10^9$</td>
</tr>
<tr>
<td>Venus</td>
<td>![Venus Image]</td>
<td>$4.87 \times 10^{24}$</td>
<td>$1.08 \times 10^8$</td>
</tr>
</tbody>
</table>

a) Which planet is heaviest? 

b) Which planet is nearest the sun?

2) Mars is approximately 227,939,921 km from Earth. How many buses of length 6m could be placed end to end to reach Mars from Earth?

Give your answer in **standard form rounded to 3 significant figures**.
3) Earth has a diameter of 12742000 metres. Calculate the volume of Earth in m³, giving your answer in standard form to 3 decimal places.
Note that the formula for volume of a sphere is $V = \frac{4}{3} \pi r^3$ where $r$ is radius.

4) Jupiter is approximately $7.7833026 \times 10^8$ kilometres from the Sun. Calculate the time it would take light to travel from the Sun to Jupiter, giving your answer to the nearest minute.
Note that the speed of light is $2.99792458 \times 10^8$ metres per second.

5) Mars has a mass of $6.417 \times 10^{23}$ kg and a volume of $1.632 \times 10^{20}$ m³.
Calculate the density of Mars, giving your answer to 3 decimal places.
Note that density is found by dividing mass (g) by volume (cm³).
Solutions for the assessment Standard Form - Real World Problems

1) a) Jupiter, b) Mercury

2) $3.8 \times 10^{10}$

3) $1.083 \times 10^{21} \text{ m}^3$

4) 43 minutes

5) $3.932 \text{ g/cm}^3$