Flipping Physics Lecture Notes:
Density
http://www.flippingphysics.com/density.html

Density is a material property of any pure substance. For example, the density of pure copper is 8.96 g/cm$^3$. And, any object made of pure copper, regardless of size, will have that same density of 8.96 g/cm$^3$.

The symbol for density is ρ. Which is the lowercase, Greek letter "rho".

The equation for density is: $\rho = \dfrac{\text{mass}}{\text{volume}}$

Let's determine the densities of two, equal diameter spheres. One steel and one wood:

$$\text{diameter} = 50.7mm \Rightarrow r = \frac{\text{diameter}}{2} = \frac{50.7mm}{2} = 25.35mm\left(\frac{1cm}{10mm}\right) = 2.535cm$$

$$V_{\text{sphere}} = \frac{4}{3}\pi r^3 = \frac{4}{3}\pi(2.535cm)^3 = 68.2374cm^3 = V_{\text{steel}} = V_{\text{wood}}$$

$$m_{\text{wood}} = ??g \;\&\; m_{\text{steel}} = 535g$$

$$\rho_{\text{steel}} = \frac{m_{\text{steel}}}{V_{\text{steel}}} = \frac{535g}{68.2374cm^3} = 7.84027 \Rightarrow \rho_{\text{steel}} \approx 7.84\frac{g}{cm^3} \textit{ (observed value)}$$

$$\rho_{\text{wood}} = \frac{m_{\text{wood}}}{V_{\text{wood}}} = \frac{45g}{68.2374cm^3} = 0.65946 \Rightarrow \rho_{\text{wood}} \approx 0.66\frac{g}{cm^3} \textit{ (observed value)}$$

The accepted value for the density of steel is roughly 7.7 – 8.0 g/cm$^3$.♥
The accepted value for the density of birch wood is roughly 0.5 – 0.8 g/cm$^3$.♣
So, both of our observed values are within the range of their accepted values.

We have just shown that steel is more dense than wood, and steel has a larger mass per unit volume than wood.

♥ https://hypertextbook.com/facts/2004/KarenSutherland.shtml
♣ https://www.engineeringtoolbox.com/wood-density-d_40.html