

$$S = \frac{1}{2} g t^2$$

$$v = g t$$

$$g_{\text{earth}} = 9.81 \text{ m/s}^2$$

$$g_{\text{moon}} = 1.62 \text{ m/s}^2$$

Motion of a falling object (Earth & Moon) - Level 3 - Challenge

1. A tool is dropped from a **height of 20 m** on **Earth**.

- a. Calculate the **time** taken to reach the ground.

- b. Calculate the **final velocity**.

2. The same tool is dropped from **20 m** on the **Moon**.

- a. Calculate the **final velocity**

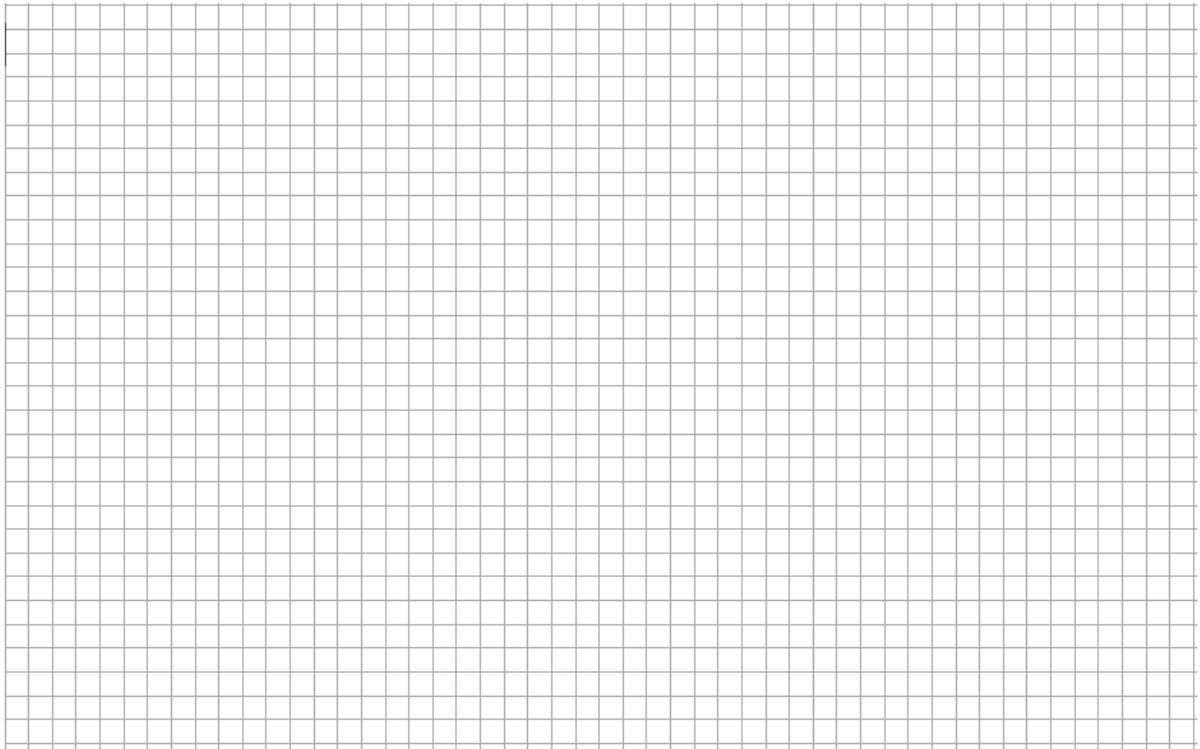
- b. Compare your answers with part 1. _____

3. Two objects are dropped at the same time, one on **Earth** and one on the **Moon**. Explain why the object on **Earth** reaches the ground first.

4. Sketch a **Velocity - Time** Graph for:

- a. A falling object on **Earth**
- b. A falling object on the **Moon**

On the same axes.



5. An astronaut says:

"Objects fall slower on the Moon because there is no gravity"

Do you agree? Explain your answer.
