

1 Recall the equation for the gravitational potential energy store of an object (E_p)

2 a) What does 'g' represent? b) What is 'g' on Earth?

3 What does 'm' represent?

4 What does 'h' represent?

5 What are the units for: a) E_p b) m c) h d) g

6 Calculate the **gravitational potential energy** store of a:

- a) 3kg ball lying on the ground, 0m above ground level
- b) 3kg ball that has been thrown 2m above ground level
- c) 3kg ball that has been thrown 4m above ground level
- d) 6kg ball that has been thrown 2m above ground level

7 Rearrange the equation for **mass**

8 Calculate the **mass of the objects** on Earth:

- a) An object with E_p of **300 J** is **2m** above the ground
- b) An object with E_p of **600 J** is **2m** above the ground
- c) An object with E_p of **600 J** is **4m** above the ground
- d) An object with E_p of **900 J** is **6m** above the ground
- e) An object with E_p of **20 kJ** is **10m** above the ground
- f) An object with E_p of **40 kJ** is **0.5 km** above the ground

9 Rearrange the equation for **height**

10 Calculate how **high the objects** are above the ground (on Earth):

- a) A **6 kg** object with an E_p of **600 J**
- b) A **12 kg** object with an E_p of **1,200 J**
- c) A **1,000 g** object with an E_p of **20 J**
- d) A **20 g** object with an E_p of **150 J**
- e) A **2,500,000 g** object with an E_p of **70 kJ**
- f) A **0.5 g** object with an E_p of **2 J**