

Potential Energy

Stored Energy

Potential energy is energy that is stored in someone/something.

many types

often because of position or shape

Calculating

$$\text{elastic } W = Fd$$

Work Force distance

gravitational

$$PE = mgh \rightarrow \text{height}$$

Potential energy mass gravity

$$W = mg$$

weight mass gravity

Gravitational

- Anything w/ potential to fall

Elastic

- When something elastic is stretched or COMPRESSED

Other

- electromagnetic

Review:

1. 90 kg man climbs rope @ height of 9.47 m. **PE**

- gravity = $10 \cdot 90$

- $PE = mgh$

- $PE = 90 \cdot 90 \cdot 9.47$

- $PE = 767070 \text{ N}$

2. 50 kg fired into air to height 400 m

- $PE = mgh$

- $PE = 50 \cdot 500 \cdot 400$

- $PE = 1000000000 \text{ J}$

- $PE = 50 \cdot 500 \cdot 100$

- $PE = 2500000 \text{ J}$

- $100,000,000 - 2,500,000$

- loss = $97,500,000 \text{ J}$

3. Person weighs 645 N @ height 4.55 m

- $W = Fd$

- $W = 645 \cdot 4.55$

- $W = 2934.75 \text{ N}$

- When they are on ground, it's 0, so 2934.75 N

- The person who climbs the ladder.