

CALCULUS-BASED PHYSICS-1: MECHANICS (PHYS150-01): WEEK 7

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WEEK 6 REVIEW

1. **Work** has a scientifically precise definition
 - Units
 - As a product of force and displacement vectors
2. Kinetic Energy and the **Work-Energy Theorem**
3. Gravitational potential energy
 - Potential energy
 - *Simplifying otherwise complex calculations*
 - Potential energy near Earth's surface
 - ...in space
4. Definition of a **conservative force**
 - Relationship between conservative forces and potential energy
 - Conservation of energy for conservative forces

WEEK 6 REVIEW PROBLEMS

Recall that the *gravitational potential energy* associated with an object of mass m located a height y above ground level is $U = mgy$. What is $-dU/dy$?

- A: mg
- B: $-mg$
- C: g
- D: $-g$

What is the physical meaning of the quantity $-mg = -dU/dy$?

- A: The force of gravity
- B: The acceleration due to gravity
- C: The mass
- D: Change in kinetic energy

WEEK 7 SUMMARY

1. things and stuff

CONCLUSION

ANSWERS

- $-mg$
- The force of gravity
- ...