

Physics Final Review

Module 1

Understand the difference between distance and displacement, speed and velocity, acceleration
Find instantaneous velocity using a graph (displacement v. time)

Module 2

Use the five formulas to calculate velocity, acceleration, displacement or time
Know what free fall is
Know what terminal velocity is

Module 3

Add or subtract vectors graphically
Add x and y vectors
Calculate the length and angle of the resultant vector

Module 4

Understand how velocity changes in the x and y direction in parabolic motion
Analyze the motion of an object in the x direction and the y direction to solve for displacement, velocity, or time

Module 5

Know Newton's three laws of motion
Calculate the weight of an object if you are given its mass
Understand normal force
Know the difference between static and kinetic friction
Solve problems that involve sliding objects across a surface where there is friction

Module 6

Use $F=ma$ to solve static and dynamic equilibrium problems

Module 7

Know what centripetal force is
Know what causes centripetal force
Solve centripetal force problems

Module 8

Know the definitions of work and energy
Understand how PE and KE change
Use the change in KE or PE of a system to determine the speed of an object

Module 9

Understand what momentum and impulse are
Understand when momentum is conserved
Use conservation of momentum to solve a recoil or motion problem

Module 10

Know what periodic motion is
Know what simple harmonic motion is

Understand the movement of a mass/spring system and a pendulum

Module 11

Understand the difference between transverse and longitudinal waves

Understand the Doppler effect

Understand how changes in amplitude and wavelength affect sound waves and light waves

Module 12

Know the law of reflection

Know what refraction is

Calculate an index of refraction

Module 13

Understand the difference between conduction and induction

Calculate the electrostatic force between two particles

Module 14

Know what a capacitor is, how it works, and what it's used for

Module 15

Find the effective resistance of resistors in series or parallel

Calculate the power of a circuit

Module 16

Know what a dipole is

Know why some things are magnetic and others aren't

Nuclear Physics

Understand the different types of radiation

Understand half-life

Fluids

Use Pascal's Principle to calculate a force exerted by a fluid

Calculate a buoyant force

There will also be some questions on nuclear physics. The questions will be similar to the problems you have done for homework.