

Physics Assignment for 11/12/2007

Term/Formula List for quiz:

force	translational equilibrium
concurrent forces	equilibrant
collinear forces	principle of transmissibility
non-collinear forces	composition of forces
net force	resolution of forces
resultant	

Homework Assignment:

- Day 1: Test 3 on chapters 6, 7
Day 2: Read pgs 133 - 136; Questions 1, 4, 5, 6; Net Force Problems
Day 3: Read pgs 136 - 142; Questions 8, 10, 14, 15; Resolution of a Force Problems
Day 4: Read pgs 142 - 148; Questions 17, 20; Problems 1, 2, 3, 5, 7, 10
Study for quiz

Isn't it meaningless to speak of a 45° angle unless you specify Fahrenheit or Celsius?

Net Force Problems: (Be sure to draw diagrams.)

1. A force of 55 N acts on a rock directly east while a force of 105 N acts simultaneously on the same rock directly west. Draw a diagram and calculate the net force on the rock.
2. Two toy cars collide head-on. The force from the red car was 17 N and the force from the blue car was 27 N. Draw a diagram and calculate the net force from the collision.
3. Two forces both having a magnitude of 32.2 lbs are exerted upon a box. One force is pushing north and the other is pushing west. Draw a diagram and determine which way the box will move and with what force.
4. Two basketball players exerted forces simultaneously on a ball at the tip-off to a game. One exerts a force of 65.0 N toward the sidelines, while the other exerts a force of 95.0 N toward one of the goals. Draw a diagram and calculate the net force on the ball and the direction it will travel. (Assume the 2 forces are at a right angle to each other.)
5. Two perpendicular forces are acting upon an object. The upward vertical force is 45 N and the net force is 62 N. Draw a diagram and calculate value of the horizontal force. What is the angle of the net force if the horizontal force is pushing towards the right?

Resolution of a Force Problems: Calculate horizontal and vertical components of these

1. A vector that is 127 units long and is oriented at 45° up from the horizontal.
2. A 255 N force, 73° South of East.
3. A plane traveling 131 km/hr 15° North of West.