

Pre-AP Physics Chapter 3

Name:

Chapter 3 Additional Practice Problems

1. Five boys are pushing on a snowball, and each is pushing with a force of 10.0 N. However, each boy is pushing in a different direction. They are pushing north, northeast, east, southeast, and south. (Each boy is pushing at an angle of 45.0° relative to his neighbor.) What is the magnitude of the total force on the ball?

Use the same vector addition method, but these vectors are forces.

We'll talk about forces in Ch. 4

2. John throws a baseball from the outfield from shoulder height, at an initial velocity of 29.4 m/s at an initial angle of 30.0° with respect to the horizontal. The ball is in its trajectory for a total interval of 3.00 s before the third baseman catches it at an equal shoulder-height level. (Assume air resistance negligible.) What is the ball's horizontal displacement?

3. A stone is thrown with an initial speed of 15 m/s at an angle of 53° above the horizontal from the top of a 35 m building. If $g = 9.8 \text{ m/s}^2$ and air resistance is negligible, then what is the magnitude of the vertical and the horizontal component of velocity of the rock as it hits the ground?

