Exam Practice Problems

1. A ball was launched at 10m/s 45° above horizontal from a 20m tall cliff. Compute the range and impact speed.
2. Look at the picture in problems 2, 28 on page 142. If A is 10kg and B is 2kg and k is 0.1 and the incline is 30° and it is moving to the left, compute the acceleration and tension in the string. Assume the pulley has no friction or rotational inertia.
3. A bullet on mass m is fired horizontally at speed V into a block of mass M that is at rest against a spring of constant k. The other end of the horizontal spring is against a wall. After the bullet is stuck in the block, what maximum distance does the spring compress?

Exam Practice Problems

1. A ball was launched at 10m/s 45° above horizontal from a 20m tall cliff. Compute the range and impact speed.
2. Look at the picture in problems 2, 28 on page 142. If A is 10kg and B is 2kg and k is 0.1 and the incline is 30° and it is moving to the left, compute the acceleration and tension in the string. Assume the pulley has no friction or rotational inertia.
3. A bullet on mass m is fired horizontally at speed V into a block of mass M that is at rest against a spring of constant k. The other end of the horizontal spring is against a wall. After the bullet is stuck in the block, what maximum distance does the spring compress?