

## PROJECTILE MOTION WS 4

Name \_\_\_\_\_

Tom kicks a rock horizontally off of a 20.0m high cliff. How fast did he kick the rock if it hits the ground 45.0m from the base of the cliff?

Erica throws a ball out of a window with a horizontal speed of 3.80m/s. If the ball hits the ground 15.0m away, how high up is this window?

Lewis throws a ball down at 25.4m/s out of a window. It hits the ground 2.25s later. How high is the window?

Elaine shoots a bullet straight up at 200.m/s. How long is the bullet in the air? (Hint: to decide the formula to use, remember when the bullet is no longer in the air,  $d_y$  will be zero!)

How high did the bullet go in the problem above? THINK CAREFULLY!