Reasonable Domain and Range

Name: _____

Determine the reasonable domain and range for each question.

1) A dud missile is fired straight into the air from a military instillation. The missile's height is given by the formula: $h(t) = -16t^2 + 400t + 100$.

2) A rock is dropped on the surface of Mars from a height of 100 feet. The height of a falling rock as a function of time since it was dropped on Mars can be modeled by the equation: $h(t) = -6.5t^2 + 100$.

3) A ball is thrown from ground level upward at an initial velocity of 60 ft/sec. The equation for "projectile motion" is $h(t) = -16t^2 + 60t$

Determine a reasonable timeframe for each problem.

4) A ball is thrown upward from the surface of Mars with an initial velocity of 60 ft/sec. The equation for "projectile motion" on Mars is: $h(t) = -6.5t^2 + 60t$. Determine the timeframe when the ball is above 100 feet.

5) A rock is thrown upward from the top of a 25 foot tower with an initial upward velocity of 100 ft/sec. The height of a rock above the ground as a function of time can be modeled by the equation:
$h(t) = -16t^2 + 100t + 25$. Determine the timeframe when the rock is at or below a height of 20 feet.

6) A woodland jumping mouse hops along the ground along a parabolic path that can be modeled by the following equation: $y = -0.2x^2 + 1.3x$ (where x is the is the horizontal position in feet and y is the height in feet). Determine the range of heights for the mouse between 2 and 3.5 seconds.