1. A ball is thrown straight upward from a height of 25 meters at initial velocity of 20 meters per second.
(a) Find the maximum height attained by the ball and the time at which it attains this height.
(b) What is the velocity of the ball when it hits the ground?

2. A ball is thrown straight upward into the air and reaches its maximum height 7 seconds later. What is the initial velocity with which the ball was thrown?

3. Let $x(t)$ be a function such that

$$x''(t) = 4\cos 2t; x'(0) = 5; x(0) = 6.$$

Find $x(t)$.