



1. Emily is launching a model rocket. If the height  $h$  (in meters) of the rocket above the ground at time  $t$  seconds is given by the quadratic equation  $h(t) = -5t^2 + 20t$ , how long does it take for the rocket to hit the ground?
2. Jack is flying a kite at the park. If the height  $h$  (in meters) of the kite above the ground at time  $t$  seconds is given by  $h(t) = -t^2 + 6t$ , what is the maximum height the kite reaches?
3. Mia is throwing a ball into the air. If the height  $h$  (in meters) of the ball above the ground at time  $t$  seconds is given by  $h(t) = -2t^2 + 8t$ , when does the ball hit the ground?
4. Ethan is building a skateboard ramp. If the height  $h$  (in meters) of the ramp at a distance  $x$  meters from the starting point is given by  $h(x) = -x^2 + 6x$ , how far from the starting point is the highest point of the ramp?
5. Sophia is throwing a stone into a pond. If the height  $h$  (in meters) of the stone above the water surface at time  $t$  seconds is given by  $h(t) = -3t^2 + 12t - 5$ , when does the stone hit the water?
6. Lucas is selling tickets to a concert. If he charges \$10 per ticket and sells  $x$  tickets, but also gives a \$20 discount for buying more than 5 tickets, how many tickets did he sell if he earned \$100?
7. Olivia is a swimmer diving into a pool. If the height  $h$  (in meters) of the dive at time  $t$  seconds after diving is given by  $h(t) = -4t^2 + 16t$ , what's the maximum height of the dive?
8. Daniel is shooting a basketball. If the height  $h$  (in meters) of the basketball above the ground at time  $t$  seconds after being shot is given by  $h(t) = -t^2 + 8t - 3$ , when does the basketball hit the ground?
9. Sarah is a skier skiing down a hill. If the height  $h$  (in meters) of the skier above the ground at time  $t$  seconds is given by  $h(t) = -2t^2 + 10t$ , how long does it take for the skier to reach the bottom of the hill?
10. Noah is launching a paper airplane. If the height  $h$  (in meters) of the airplane above the ground at time  $t$  seconds is given by  $h(t) = -3t^2 + 12t - 4$ , when does the airplane hit the ground?