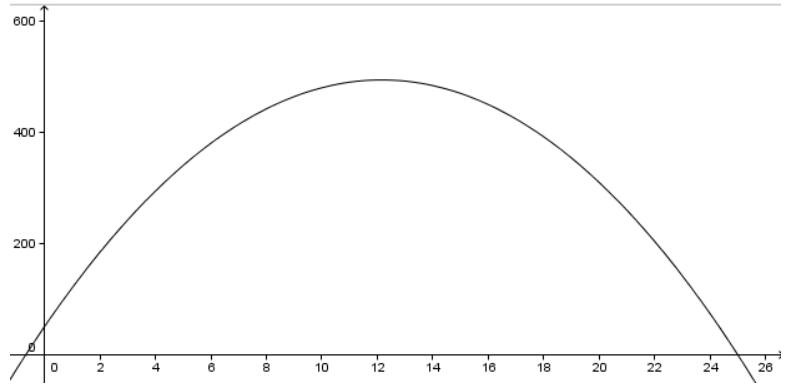# QUADRATIC FUNCTIONS

1 The value of Jenifer's stock portfolio is given by the function $v(t) = -3t^2 + 73t + 50$, where $v(t)$ is the value of the portfolio in hundred of dollars and t the time in months.

▪ How much money did Jenifer start with?

▪ When will the value of Jenifer's portfolio be at a maximum?

2 The value of Jon's stock portfolio is given by the function $v(t) = 10t^2 - 100t + 450$, where $v(t)$ is the value of the portfolio in hundred of dollars and t the time in months.

▪ How much money did Jon start with?

▪ What is the minimum value of Jon's portfolio?
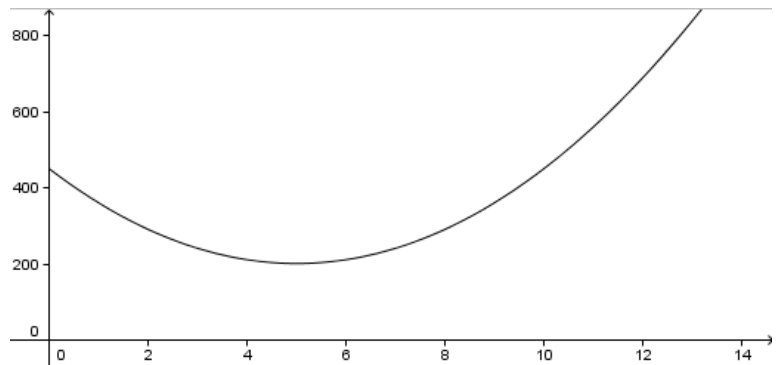
3 At a swim meet, Janet dives from a diving board that is 40 feet high.
Her position above the water is represented by the equation $h(t) = -16t^2 + 24t + 40$, where t represents time in seconds and $h(t)$ represents height in feet.

▪ After how many seconds does Janet enter the water?

▪ What is the greatest height Janet reaches in her dive?

▪ How long will it take to reach the maximum height?
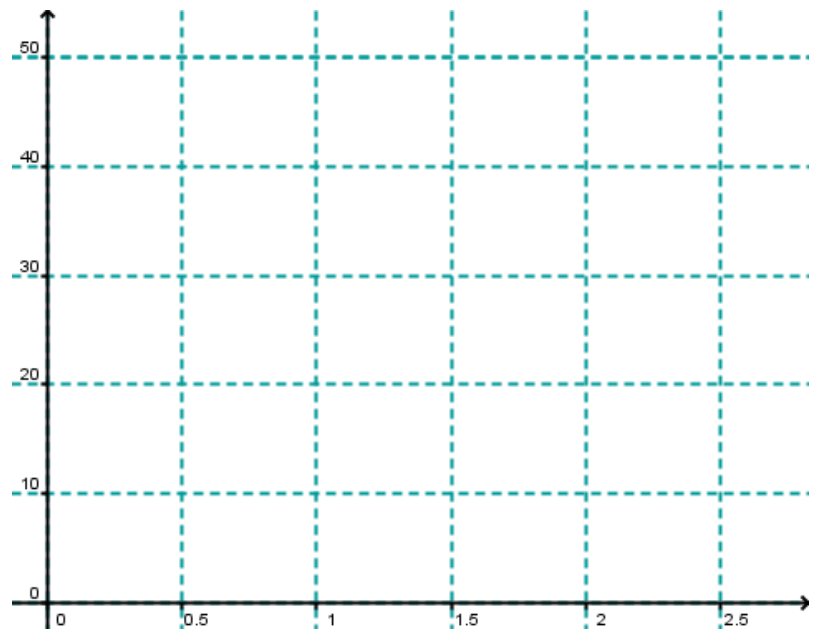
4 The width of a rectangle is five less than twice the length.
▪ What is the maximum area of such a rectangle?

5 The perimeter of a rectangle is 70 m.
▪ What is the maximum area of such a rectangle?

6 The base of a triangle is one more than four times the height.

▪ Determine the dimensions that will give a total area of 9 cm².