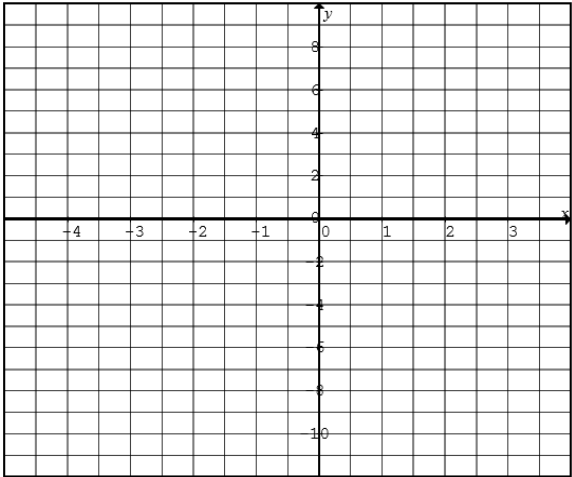


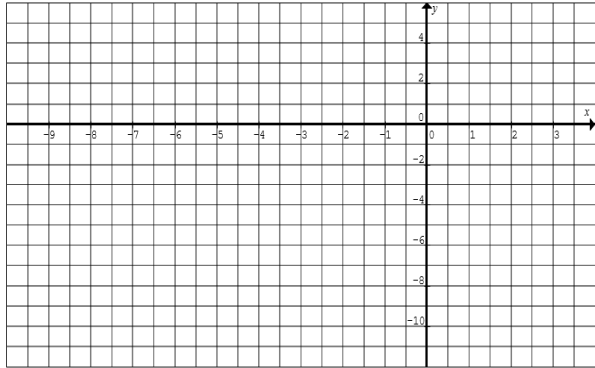
Let's continue with last day's lesson with another example.

**Example 1:** Given  $y = -2(x+1)^2 + 8$ , determine the vertex, the A of S, x & y-intercepts, domain, and range

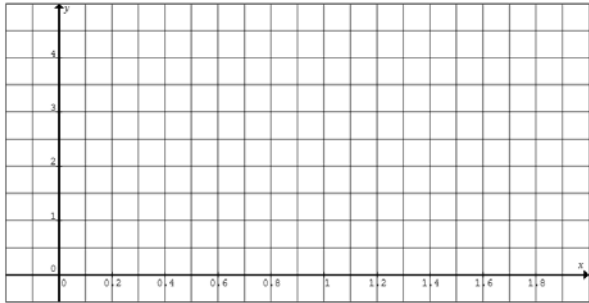
<p>a) Change to general form</p> <p>b) Determine x-coordinate of vertex</p> <p>c) This is also equation for A of S</p> <p>d) Sub x-coordinate into equation and find 'y' to determine vertex</p> <p>e) Find y-intercept. x-coordinate = 0</p>	<p>f) Find x-intercepts. y-coordinate = 0</p> <p>Graph function (congruent to <math>y = -x^2</math>)</p>  <p>g) Determine domain and range</p>
---	---

**Example 2:** Given  $y = -0.5x^2 - 3x - 0.5$ , determine the vertex, the A of S, x & y-intercepts, domain, and range

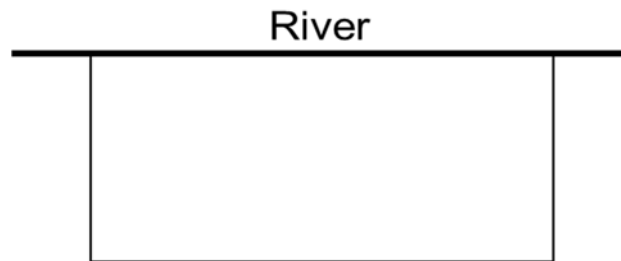
<p>a) General form</p>	<p>b) X-coordinate of vertex</p>
------------------------	----------------------------------

<p>c) Equation for A of S</p> <p>d) Vertex</p> <p>e) Y-intercept</p> <p>f) X-intercept</p>	<p>Graph function</p>  <p>g) Domain and Range</p>
--	---

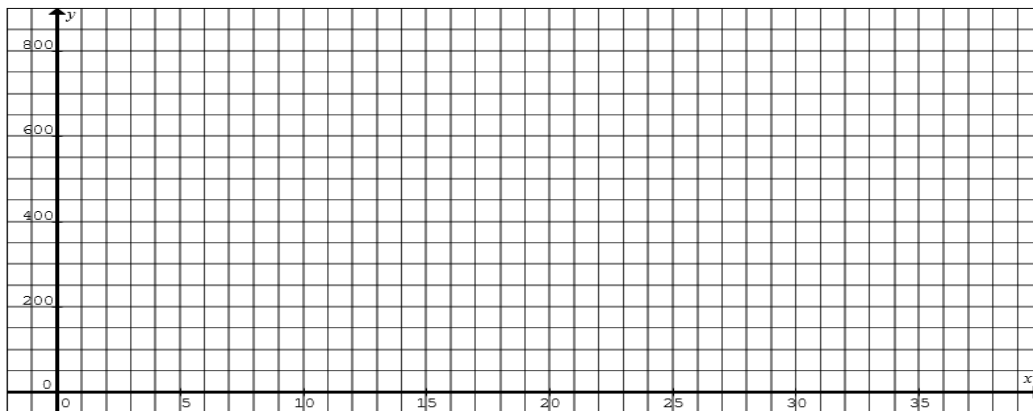
**Example 3:** Alexandre Despatie is a world class Canadian Olympic diver. At the 2008 Beijing Olympics, his height ( $h$ ), in meters, from one of his forward somersault dives from the 3 m springboard is given by  $h(t) = -4.9t^2 + 6t + 3$ , where ( $t$ ) is the time in seconds after Despatie leaves the board.

<p>a) Graph the function</p>  <p>b) When will he reach his max height?</p>	<p>c) What is Despatie's max height?</p> <p>d) What is the y-intercept and what does it represent?</p> <p>e) What is the domain and range of Despatie's dive?</p>
---	---

**Example 4:** A rectangular lot is bounded on one side by a river and on the other three sides by a total of 80 m of fencing.



- a) Use variables to represent the length, width, and area of the lot.
- b) Write an equation in general form to represent the area of the lot.
  
- c) What are the coordinates of the vertex and what do they represent?
  
  
- d) Graph the function



- e) What is the domain and range of the function?

Homework: