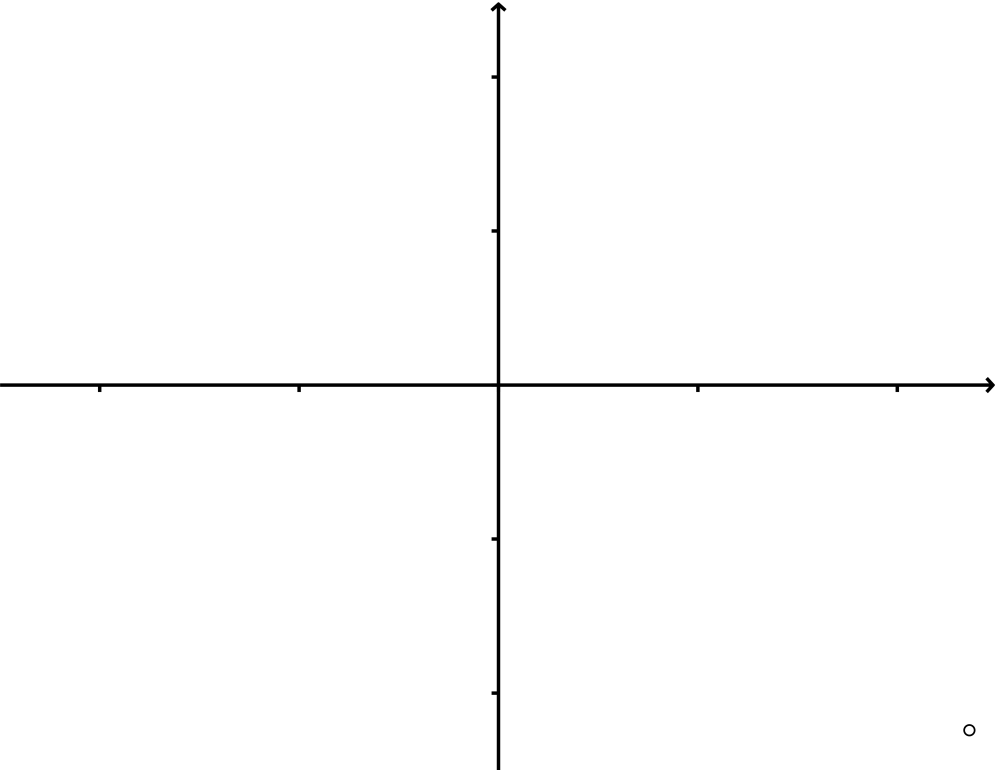
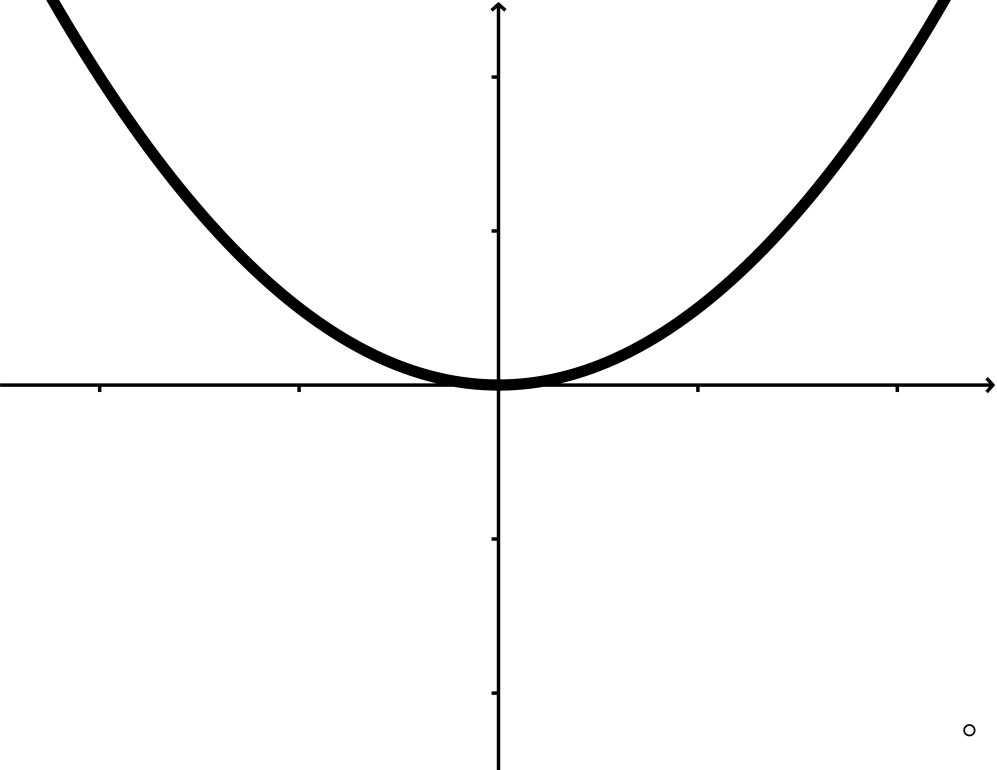
Recall: The derivative of the function at is:

For each input value, , we can compute an output value which is using the definition above.

Recall: Definition: A function is a mathematical rule which assigns to each input value an output value.

The derivative is a function.

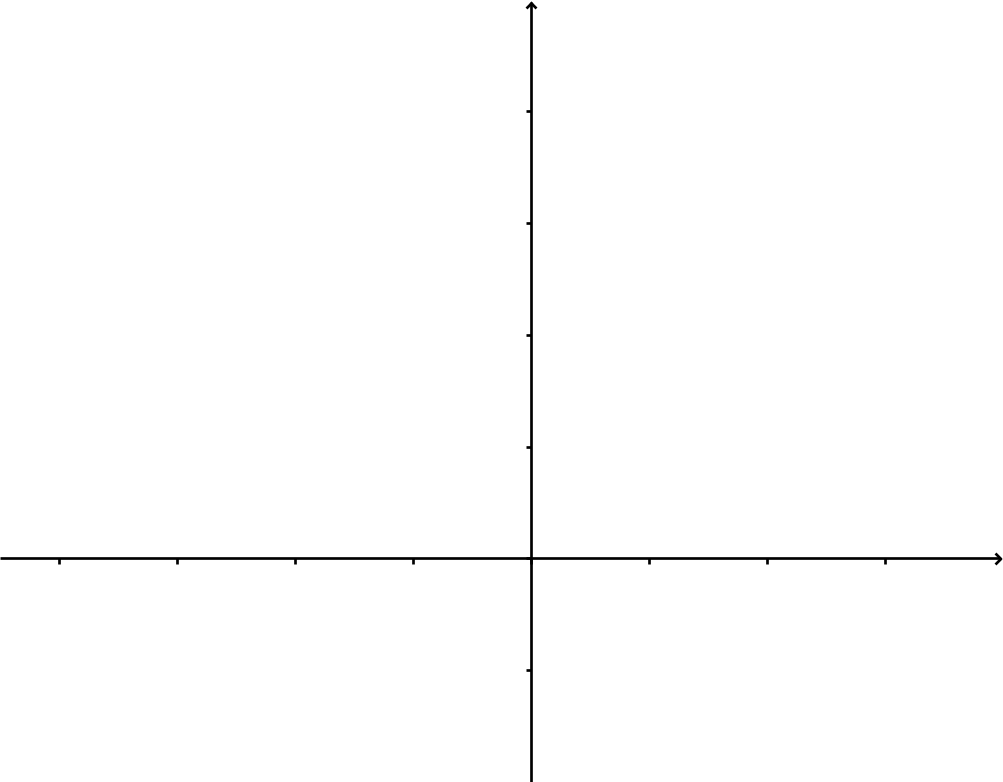
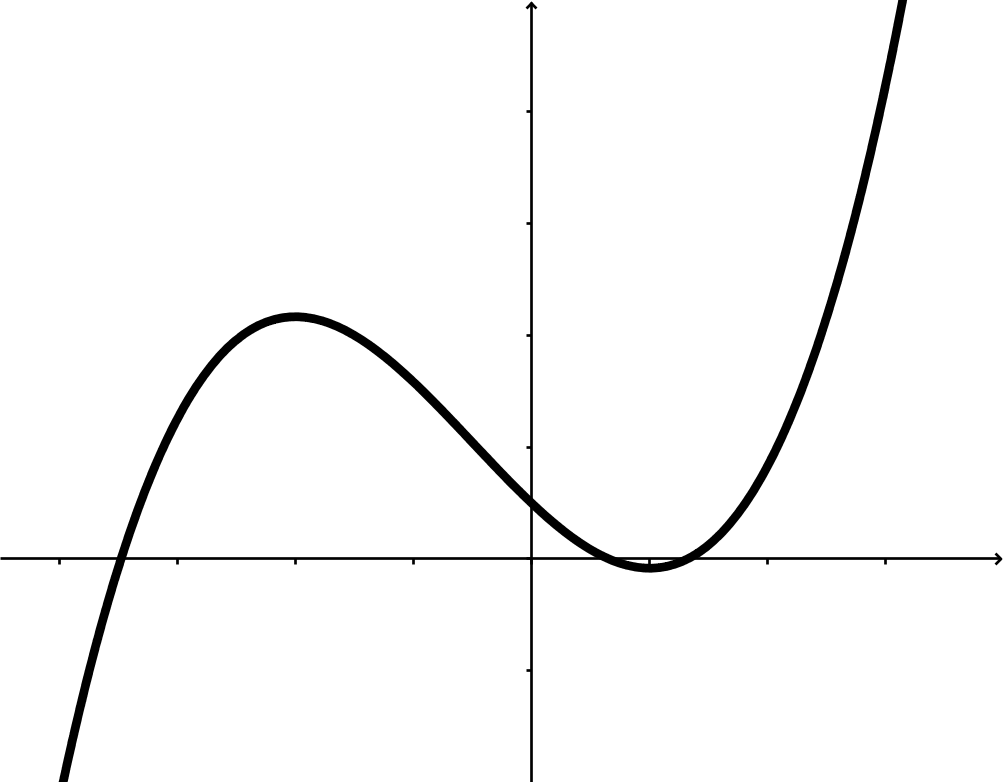
Example: Find the derivative of the function



Old: We say that a function, , is increasing if the a.

We say that a function, , is decreasing if the ave. rate of change .

New:



Recall: The derivative, , can be interpreted as the (instantaneous) rate of change of .

Just like our original rate of change (slope);

The units of

Notation:

Example 1: For the cost function

Cost to produce quantity items (units in dollars)

quantity of items produce (units in items)

The units of

Example 2: For the position function

position at time (units in feet)

seconds

The units of