

## Algebra 2 Linear, Power, and Exponential Functions

Place the following equations into the  $y =$  screen on the graphing calculator.

$$Y_1 = 20x$$

$$Y_2 = 4x^2$$

$$Y_3 = 2^x$$

Make  $Y_2$  graph darker and make  $Y_3$  graph with a zero moving and leaving a trail behind.

**Step 1:** Graph these three in the following window:  $X : [0, 5]$      $Y : [0, 10]$

Which function appears to be growing the fastest?

Which function appears to growing the slowest?

**Step 2:** Graph these three in the following window:  $X : [0, 10]$      $Y : [0, 120]$

Which function appears to be growing the fastest?

Which function appears to growing the slowest?

**Step 3:** Graph these three in the following window:  $X : [0, 20]$      $Y : [0, 200]$

Which function appears to be growing the fastest?

Which function appears to growing the slowest?

**Step 4:** Graph these three in the following window:  $X : [0, 20]$      $Y : [0, 500]$

Which function appears to be growing the fastest?

Which function appears to growing the slowest?

Compare the "rate of change" for the three functions

	$Y_1 = 20x$	$Y_2 = 4x^2$	$Y_3 = 2^x$
Close to the Origin (small values of $x$ )			
Far from the origin (large values of $x$ )			