

3.1 In-class Practice

- Plot each point in a rectangular coordinate system: $(2,3)$, $(-1,2)$, $(-3,-2)$, $(2,-4)$, $(0,-1)$, $(3,0)$
- Fill in the blank.
 - The point with coordinates $(0,0)$ is called the _____ of a rectangular coordinate system.
 - For any value of x , the $(x,0)$ point lies on the _____-axis.
 - To find the x -intercept of a line, we let _____ equal 0 and solve for _____. To find the y -intercept, we let _____ equal 0 and solve for _____.
 - The equation _____ = 4 has a horizontal line as its graph.
 - To graph a straight line, we must find a minimum of _____ points.
 - The point $(\underline{\quad}, 4)$ is on the graph of $2x - 3y = 0$.

- Use the given information to determine the quadrants in which the point (x,y) may lie.
 - $xy > 0$
 - $xy < 0$
 - $\frac{x}{y} < 0$
 - $\frac{x}{y} > 0$

- Complete the table

x	y
0	
	0
1	
	-1

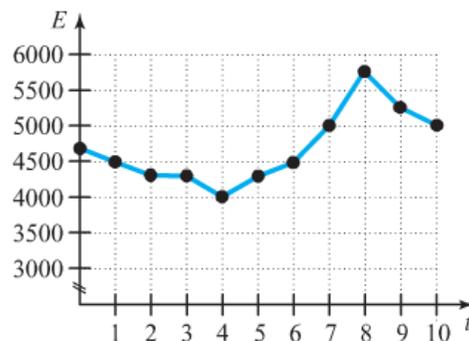
 for the equation $x + 3y = -5$ and then graph the equation.

x	y
0	
	0
1	
	-1

- Find the x - and y -intercepts, state the slope, and graph the equation.
 - $x - 2y = -4$
 - $\frac{5}{7}x + \frac{6}{7}y = -2$
 - $y = -3$
 - $x = 4$
 - $x - 3y = 0$
 - $y = -\frac{2}{3}x$

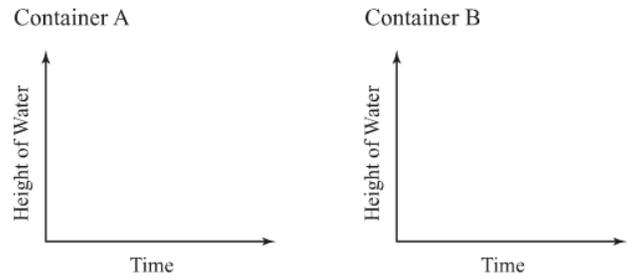
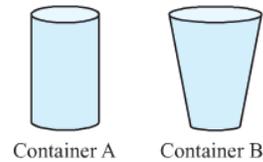
- The 2009 average retail price P (in dollars) for an n -year-old Toyota Camry can be modeled by the function $P = 24,215 - 1832n$, where $0 \leq n \leq 4$.
 - What was the average retail price of a 4-year-old Camry in 2009?
 - By what amount does this model depreciate annually?
 - Graph the equation for $0 \leq n \leq 4$.

- The graph shows the annual enrollments E for a community college, where t represents the number of years since 1995.
 - Estimate the enrollment in 1999.
 - In which years was the annual enrollment greater than 5000 students?
 - Between which two consecutive years was the greatest decline in enrollments? By how many students did the enrollment decrease?



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8. *Investigation.* Water is poured at a constant rate into each of the containers shown. For each container, sketch a graph that shows the height of the water in the container over time.



9. Find the midpoint of each segment with the given endpoints.
- a) $(5, 2)$ and $(-1, 8)$ b) $(-\frac{2}{3}, 4)$ and $(2, -\frac{3}{2})$
10. Segment PQ has the given coordinates for one endpoint $P(5, 8)$ and for its midpoint $M(8, 2)$. Find the coordinates of the other endpoint Q .