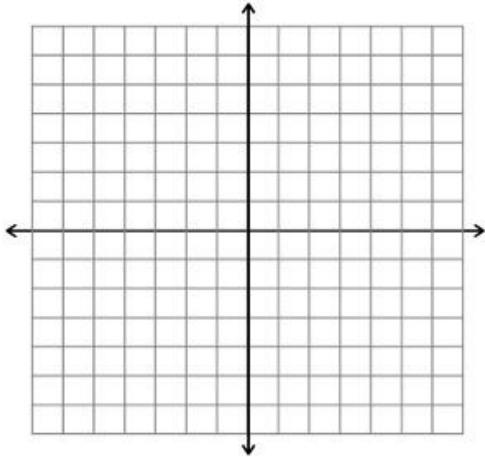Math I Review #1   Name: _____
Non-Calculator

1. Solve $4(x+3) - 5 = 2x + 8$

2. Graph the system $\begin{cases} y \le 2x - 4 \\ 2x + y \ge 9 \end{cases}$

3. For what positive integer value will 2^x first exceed $3x + 2$?

4. Simplify $\dfrac{\left(16^{\frac{1}{2}}\right)^4}{2^8}$

5. The expression $-3m^2 + 15m$ is the profit for a rock concert based on the ticket price m. What is the most the promoters can charge per ticket and still make a profit?
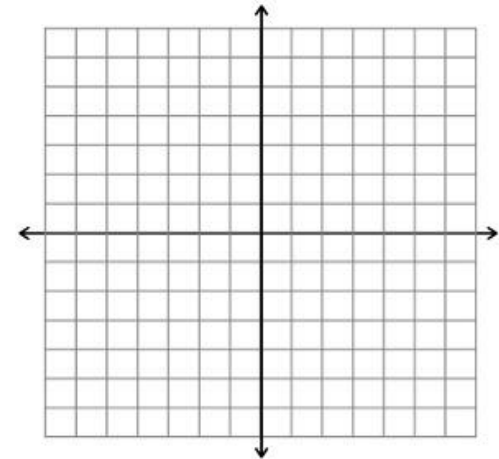
Math I Review #2   Name: _____
Non-Calculator

1. Jack's bowling score was 20 less than twice Jill's score. The sum of their scores was 205. What was Jack's score?
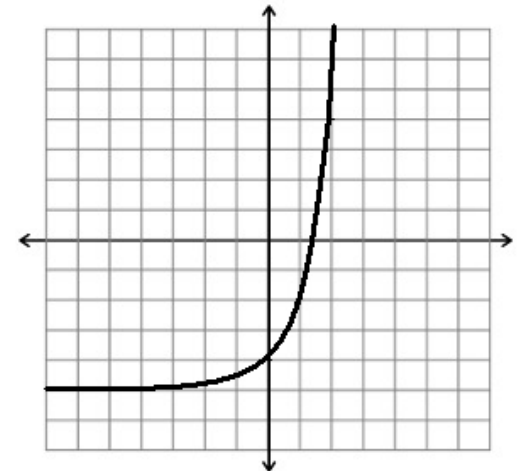
2. Find the value for y $\begin{cases} 3x + y = 14 \\ 3x = 2y - 10 \end{cases}$

3. Graph
    $f(x) = x^2 - 3x - 18$

4. The Rocket Coaster has 15 cars, some that hold 4 people and some that hold 6 people. There is room for 72 people altogether. How many 4 passenger cars are there?

5. If $y = 3^x$ is replaced with $y = 3^x + k$ and results in the function graphed to the right. Determine the value of k.

1. There are 35 players on the youth soccer league. Using the two-way frequency table determine how many of the players are 12-14 year old females.

		Age Group			
		6-8 years old	9-11 years old	12-14 years old	Total
Gender	Male	0.11	0.17	0.29	0.57
	Female	0.14	0.09	0.2	0.43
	Total	0.25	0.26	0.49	1

2. The box plots represent the height of tomato plants 10 days after being planted into three different types of fertilizer. What is the difference between the median heights of the tomato plants for Fertilizer A and Fertilizer C?
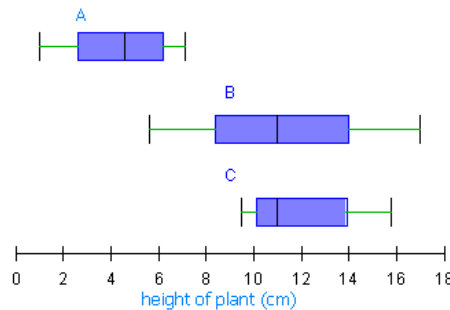
3. The mean height of the students in Marcy's fourth grade class is 54 inches. Marcy's dad is a professional basketball player. What happens to the mean height when his height is included?

4. On last week's math test, Mr. Smith's class scored a mean of 83 points with a standard deviation of 8 points. Mr. Jenkin's class scored a mean of 78 points with a standard deviation of 4 points. Which class was more consistent on the test?
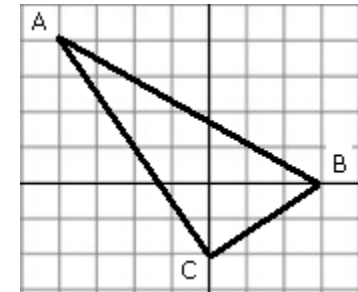
5. What is the shape of the histogram?
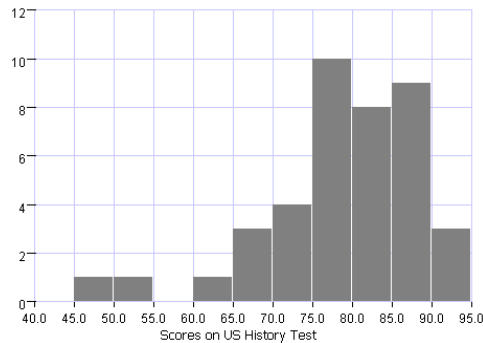
1. John was visiting three cities that lie on a coordinate grid at (-4,5), (4,5) and (-3,-4). If he visited all three cities and ended where he started, what is the distance he traveled?

2. Triangle ABC is a right triangle. Determine the area.

3. Identify as precisely as possible the type of quadrilateral ABCD given its vertices as A(-1,-5), B(8,2), C(11,13), and D(2,6).

4. Line segment GH has an endpoint of G(7,3) and a midpoint of (10, -1). What are the coordinates of endpoint H?

5. Write the equation of the line perpendicular to $y = \frac{3}{2}x - 4$ and passing through the point (0,5).

1. The formula V=I·R gives the voltage (volts) as the product of the current I (amps) and the resistance R (ohms). Solve the formula for the current I.

2. A parking garage charges $1 for the first half-hour and $0.60 for each additional half-hour or portion thereof. If you have only $6.00 in cash, how long can you park?

3. The number of rooms rented at a hotel is related to the room rate by the function rule $N(r) = 200 - 2.5r$. What is the domain of the function in terms of the context?

4. Which of the following function rules would best represent the number of dots for any given stage n?

stage   1   2   3   4

    a. $f(n) = n$

    b. $f(n) = n^2$
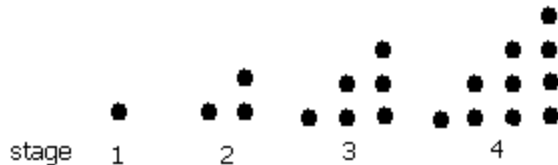
    c. $f(n) = n^2 + n$

    d. $f(n) = \dfrac{n^2 + n}{2}$

5. Bakery A charges $15 for the order and $0.75 per cupcake in the order. Bakery B charges $5 for the order and $1.25 per cupcake in the order. Write a function representing the difference in cost between Bakery A and Bakery B.


Height of a Burning Candle

Time (hours)
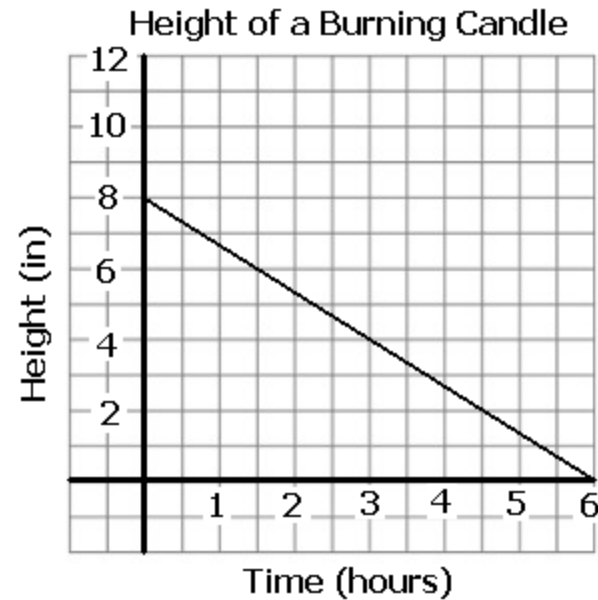
1. Determine the slope and interpret what it means within the context.

2. What is the domain of the linear function?

3. How long would a candle with an initial height of 24 last if it burned at the same rate?

4. Compare the slope of the function for the original candle above to the slope of the linear function for a second candle whose x-intercept is 4 and y-intercept is 12. What can you conclude about second candle?

5. After how many hours was the height of the candle 6 inches tall?

Math I Review #7   Name: _____

1. The price of a movie ticket increases 2% each year. The Theatre Deluxe charged $7.00 for regular admission in 2000. What is the cost of a ticket in 2013?
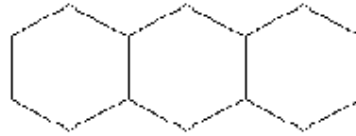
2. Let p be the perimeter of the figure.
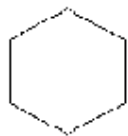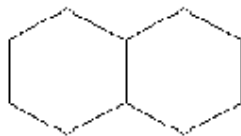
p=6   p=10   p=14

   Write a Now-Next equation to represent the perimeter.

3. The function rule $f(x) = 2.5x + 10$ represents the cost for shipping any number of calculators x from Company A. The cost for shipping calculators from Company B is represented in the table.

x	0	2	4	6	8	10
g(x)	8	14	20	26	32	38

   What is the difference in the cost per calculator shipped?

4. Alan bought 5 goldfish. Every month the goldfish population tripled. Write a Now-Next equation to represent the number of goldfish from one month to the next.

5. If the slope of a line changes from -3 to $\frac{-1}{3}$ and the y-intercept changes from -3 to 0, describe how the graph of the original line is affected.

Math I Review #8   Name: _____

1. What is the perimeter of the triangle?
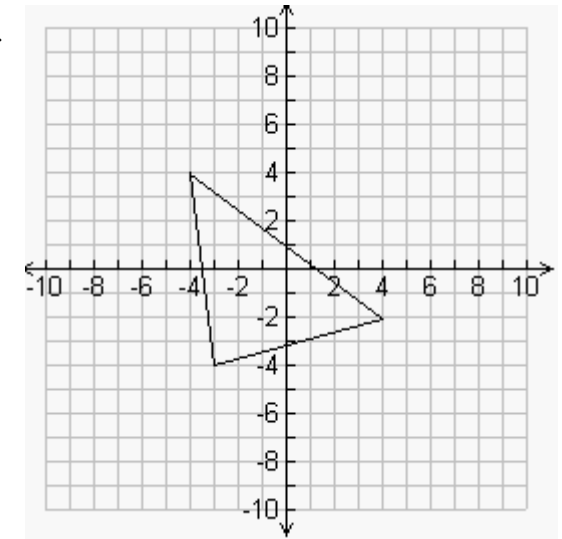
2. A radioactive dye is injected into a laboratory rat for research purposes. The amount of dye remaining after any number of hours x can be modeled by the function rule $D(x) = 40(0.85)^x$. What is the percent of decrease in the dye each hour?

3. The table below shows the distance a car has traveled.

minutes	10	30	45	50
Distance traveled in miles	2.5	15.8	30.8	32.5

   During which time interval is the car traveling the fastest?

4. A scientist has 100 grams of a substance where half of it decays every hour. Write an equation to determine how long it takes until 25 grams are remaining.

5. The rules y=18+0.4x and y=11+0.54x give the lengths of two springs in centimeters as weight in grams x is attached to the spring. What weight makes the lengths of the springs the same?

Math I Review #9   Name: _____
Non-Calculator

1. What are the x intercepts of the function $f(x)=(6-x)(x+8)$?

2. Patty gets paid $10 per hour. Tyler gets paid $1 for the first hour, $2 for the second hour, $4 for the third hour, and so on. When will Tyler get paid more per hour than Patty?

3. A rectangle has a length 5 feet greater than its width. If both dimensions are increased by 2 feet, write an expression for the difference in the areas of the rectangles.

4. Martha paid $16 for two buffet dinners and one drink. James paid $18 for two buffet dinners and two drinks. What would be the cost for one buffet and one drink?

5. Factor $36x^2 - 25$

Math I Review #10   Name: _____
Non-Calculator

1. The function $h(t)= -5t^2 +5t +60$ models the approximate height of an object t seconds after it is launched . How many seconds does it take the object to hit the ground?

2. The MARS rover can travel 2 feet every second. How many hours would it take to travel 100 miles? (5280 ft = 1 mile)

3. The total value of the $5 bills and $10 bills in a cash box is $410. There are eight more $10 bills than $5 bills. How many $5 bills are there in the cash box?

4. Simplify $\dfrac{(4^{1/2})^6}{2^3}$

5. Solve $4x + 2(x-6) = 8x + 2$