

# **PRE-CALCULUS BELLRINGER**

## **WEDNESDAY 8/13/14**

## **& THURSDAY 8/14/14**

- 1. Write the equation of the line that passes through the points  $(0,-8)$  &  $(1,2)$**
- 2. Write the equation of the line that passes through the points  $(-1, 10)$  &  $(4,7)$**

# PRE-CALCULUS BELLRINGER

## FRIDAY 8/15/14

1. Find  $f(-x)$  for  $f(x) = x^2 + 3$ .

2. Find the domain of the function  $g(x) = \frac{4}{x-4}$ .

3. Evaluate the function when  $x = -7$ .

$$f(x) = \begin{cases} x + 2, & x > -5 \\ -4, & x \leq -5 \end{cases}$$

4. A company produces a product for which the variable cost is \$1.35 per unit and the fixed costs are \$678. The total cost  $C$  for producing  $x$  units of the product can be represented by the function  $C(x) = 1.35x + 678$ . Find the total cost when 1000 units are produced.

# **ALGEBRA 2 BELLRINGER**

## **FRIDAY 8/15/14**

## **& MONDAY 8/18/14**

**FIND THE NEXT 2 NUMBERS OF EACH PATTERN:**

**1. 1, 3, 5, 7, 9, 11, ...**

**2. -2, -4, -6, -8, -10, -12, ...**

**3. 0.2, 1, 5, 25, 125, 625, ...**

**4. 50, 45, 40, 35, 30, 25, ...**

**5. 512, 256, 128, 64, 32, 16, ...**

# ALGEBRA 2 SMUGI 8/15/14

**Find the 17<sup>th</sup> term of each sequence:**

**1.)  $a_1 = 18, d = 5$**

**2.)  $a_1 = 18, d = -3$**

# PRE-CALCULUS BELLRINGER

## TUESDAY 8/19/14

1. Find  $f(-x)$  for  $f(x) = x^3 + 3x$

2. Find  $f(-x)$  for  $f(x) = -2x^2 - 10x$

3. What is the domain of this function?

$$F(x) = \sqrt{\quad}$$

# ALGEBRA 2 BELLRINGER

## TUESDAY 8/19/14

## & WEDNESDAY 8/20/14

Find the next term in each sequence.

1.  $1, 2, 4, 8, \dots$

3.  $0.1, 1, 10, 100, \dots$

2.  $336, 168, 84, 42, \dots$

4.  $900, 300, 100, \dots$

# PRECALCULUS BELLRINGER

## THURSDAY 8/21/14

1.) GRAPH THE FOLLOWING PIECEWISE FUNCTION:

$$y = \begin{cases} x^2 - 2, & x < 1 \\ -2x + 4, & x \geq 1 \end{cases}$$

# ALGEBRA 2 SMUGI 8/19/14

**Find the 10<sup>th</sup> term of each geometric sequence:**

**1.)  $a_1 = 18, d = 5$**

**2.)  $a_1 = 18, d = -3$**

**3. Find the missing term of this geometric sequence: 12.5, \_\_\_\_\_, 50**



# ALGEBRA 2 BELLRINGER

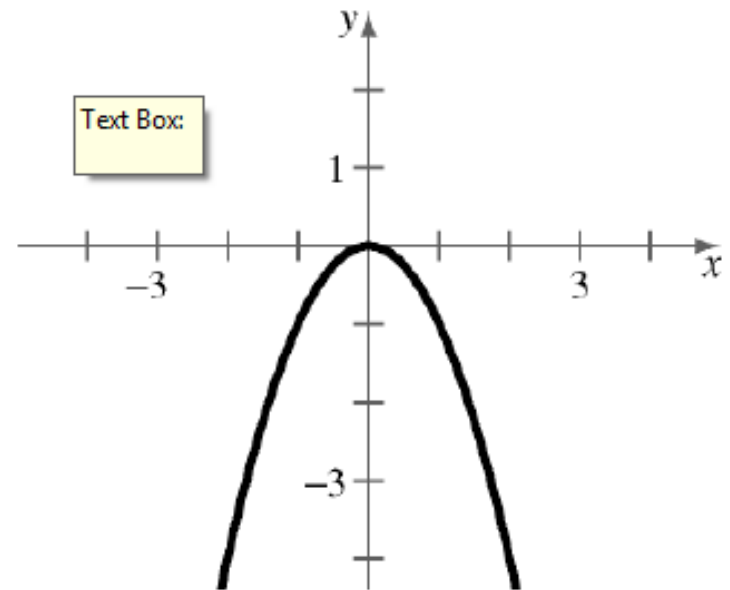
## THURSDAY 8/21/14 & FRIDAY 8/22/14

1. IDENTIFY THIS SEQUENCE AS GEOMETRIC, ARITHMETIC OR NEITHER:  $8, -4, 2, -1, 0.5, \dots$
2. FIND THE 15<sup>TH</sup> TERM OF THE SEQUENCE IN PROBLEM #1

# PRECALCULUS BELLRINGER

## MONDAY 8/25/14

Determine the intervals over which the function  $f(x) = -x^2$  is increasing, decreasing, or constant.



2.

Determine whether the function  $g(x) = \frac{1}{x^2}$  is odd, even, or neither.

# **ALGEBRA 2 BELLRINGER**

## **MONDAY 8/25/14 & TUESDAY 8/26/14**

**Write the related series for each finite sequence. Then evaluate each series:**

**1.  $-5, -15, -25, -35, -45$**

**2.  $-3, -6, -9, \dots, -21$**

**ALGEBRA 2 BELLRINGER**  
**WEDNESDAY 8/27/14 &**  
**THURSDAY 8/28/14**

**Consider the sequence  $16, -8, 4, -2, 1, \dots$**

- a. Describe the pattern formed in the sequence.**
- b. Find the next three terms.**

# PRE CAL BELLRINGER

## WEDNESDAY 8/27/14

**1. Graph these functions by using an  
by hand on the same graph. Label  
each one by its letter:**

**a.  $f(x) = x^2$**

**b.  $f(x) = x^2 - 4$**

**c.  $f(x) = (x - 3)^2$**

**d.  $f(x) = (x - 3)^2 - 4$**

# PRE-CALCULUS BELLRINGER

## FRIDAY 8/29/2014

Given that  $f(x) = 4x^2 - 6x$  and  $g(x) = \frac{1}{2}x$ , find the composition.

1.  $f \circ g$

2.  $g \circ f$

3. Solve  $x = \frac{2y + 3}{y - 1}$  for  $y$ .

# ALGEBRA 2

## 8/29/2014

- **1. YOU WILL MAKE \$58,000 A YEAR FOR THE FIRST YEAR OF YOUR CAREER AND YOU WILL RECEIVE A 4% RAISE EVERY YEAR. WHAT WILL YOUR SALARY BE IN YOUR 15<sup>TH</sup> YEAR OF WORKING THERE?**
- **2. GIVEN AN ARITHMETIC SEQUENCE IN WHICH  $a_1 = 3$ ,  $a_5 = 15$ ,  $a_n = 69$ , and  $d = 3$ , FIND  $n$**

# PRE-CALCULUS BELLRINGER

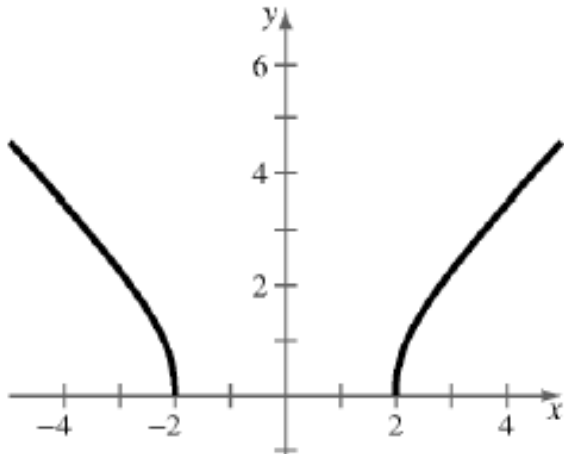
## WEDNESDAY 9/3/14

Find the inverse of the function.

1.  $f(x) = \frac{1}{3}x - 2$

2.  $f(x) = \frac{x+4}{x-6}$

3. Is the function shown in the graph a one-to-one function? Does it have an inverse function? Explain.





# ALGEBRA 2 BELLRINGER

## WEDNESDAY 9/3/14 & THURSDAY 9/4/14

1. GIVEN A SEQUENCE DETERMINED BY  $a_n = 2n + 3$

- A. what is the 100<sup>th</sup> term of this sequence
- B. What is an expression in sigma notation for the sum of the first 500 terms of this sequence
- C. What is the sum of the first 500 terms of this sequence?
- D. What is the sum of the 501<sup>st</sup> through 1000<sup>th</sup> terms of this sequence?

2. Determine if the following geometric series converges or diverges:

$$\sum_{n=1}^{\infty} \frac{1}{2^n}$$

3. Find the approximate sum for this series if possible

# ALGEBRA 2 BELLRINGER 9/8/14

○ STATE WHETHER EACH INEQUALITY IS TRUE OR FALSE:

○ 1.)  $5 < 12$       2.)  $5 < -12$       3.)  $5 \geq 12$

○ 4.)  $5 \leq 12$       5.)  $5 \leq 5$       6.)  $5 \geq 5$

○ SOLVE EACH EQUATION

○ 7.)  $3X + 3 = 2X - 3$       8.)  $5X = 9(X - 8) + 12$

# ALGEBRA 2 SMUGI 9/4/14

GIVEN A SEQUENCE DETERMINED BY  $a_n = 5n - 6$

- A. what is the 134<sup>th</sup> term of this sequence
- B. What is an expression in sigma notation for the sum of the first 766 terms of this sequence
- C. What is the sum of the first 256 terms of this sequence?
- D. What is the sum of the 401<sup>st</sup> through 999<sup>th</sup> terms of this sequence?

# ALGEBRA 2 BELLRINGER

## TUESDAY 9/9/14 & WEDNESDAY 9/10/14

### ○ SOLVE EACH EQUATION:

○ 1.)  $5(X - 6) = 40$

2.)  $5B = 2(3B - 8)$

### ○ SOLVE EACH INEQUALITY:

○ 3.)  $4X + 8 > 20$

4.)  $4(X - 1) < 3X + 5$

# PRE CAL BELLRINGER THURSDAY

9/11/14

Factor the expression completely.

1.  $x^4 - 3x^2 - 4$

2.  $2y^4 + 6y^3 + 2y^2 + 6y$

Find the  $x$ -intercepts of the function.

3.  $f(x) = \frac{x - 3}{x + 8}$

4.  $f(x) = 2x^2 - 7x + 6$

# PRE-CAL BELLRINGER MONDAY

9/15/14

Factor the expression completely.

1.  $x^2 - 5x - 24$

2.  $3x^3 + 6x^2 - 4x - 8$

3. Simplify  $\frac{4n^5 - 12n^3 + 6n^2}{2n^2}$ .

4. Multiply  $(2x - 1)(3x^2 - x + 5)$ .

ALGEBRA 2 SMUGI 9/10/14

○ **BANANAS COST TWENTY-FIVE CENTS PER POUND.**

**I WANT TO SPEND BETWEEN \$2.50 & \$3 ON BANANAS. BETWEEN WHAT AMOUNT OF BANANAS CAN I PURCHASE?**

# ALGEBRA 2 BELLRINGER 9/11/14

○ 1.  $|z - 1| = 7z - 13$

○ 2.  $|k - 3| \leq 19$



# PRE CALCULUS BELLRINGER

9/17/14

Factor the expression completely.

1.  $x^2 - 5x - 24$

2.  $3x^3 + 6x^2 - 4x - 8$

3. Simplify  $\frac{4n^5 - 12n^3 + 6n^2}{2n^2}$ .

4. Multiply  $(2x - 1)(3x^2 - x + 5)$ .

# ALGEBRA 2 BELLRINGER

WEDNESDAY 9/17/14 &  
THURSDAY 9/18/14

1. Solve and graph

$$2 < 5 - |x - 17|$$

2. Solve and check for extraneous solutions

$$|3x + 5| - 2x = 3x + 4$$

# PRECALCULUS BELLRINGER

## FRIDAY 9/19/14

Divide.

1.  $(2x^5 - 3x^4 + 9x^2 - 7)$  by  $(2x + 1)$

2. 
$$\frac{3x^3 - 12x^2 + 5x - 18}{x - 4}$$

# ALGEBRA 2 BELLRINGER 9/22/14

## GRAPH:

1.  $Y = 2X + 4$

2.  $Y = \frac{1}{3}X - 2$

3.  $Y = |X - 2|$

PRE CAL BELLRINGER 9/23/14

STATE THE POSSIBLE NUMBER OF RATIONAL ROOTS, POSSIBLE POSITIVE AND NEGATIVE ROOTS (DESCARTES) AND THEN FIND ALL ROOTS:

$$F(X) = x^3 - x^2 - 24x + 54$$

ALGEBRA 2 BELLRINGER TUESDAY  
9/23/14 & WEDNESDAY 9/24/14

1. GRAPH AND SHADE APPROPRIATELY:

$$Y > 2X + 3$$

$$Y \leq -(1/2)X - 2$$

2. GRAPH AND SHADE APPROPRIATELY:

$$Y > 3X - 1$$

$$Y \geq |X + 2|$$

# PRE CALCULUS BELLRINGER

## WEDNESDAY 10/1/14

1.  $(9 - 6i) - (4 - i)$

2.  $(2 + 3i)(3 - 2i)$

3. Simplify and write in standard form:  $\frac{2i}{i^4}$

4. Write the quotient  $\frac{3 - i}{1 - 3i}$  in standard form.

5. Plot the following in the complex plane:  $-2$ ,  $3 - i$ ,  $-i$ ,  $1 + i$ .

# ALGEBRA 2 BELLRINGER WEDNESDAY 10/1/14 & THURSDAY 10/2/14

**Find each sum.**

1.  $\begin{bmatrix} 3 & 5 \\ 2 & 8 \end{bmatrix} + \begin{bmatrix} 3 & 5 \\ 2 & 8 \end{bmatrix} + \begin{bmatrix} 3 & 5 \\ 2 & 8 \end{bmatrix}$

2.  $\begin{bmatrix} -4 \\ 7 \end{bmatrix} + \begin{bmatrix} -4 \\ 7 \end{bmatrix} + \begin{bmatrix} -4 \\ 7 \end{bmatrix} + \begin{bmatrix} -4 \\ 7 \end{bmatrix} + \begin{bmatrix} -4 \\ 7 \end{bmatrix}$

3.  $\begin{bmatrix} -1 & 3 & 4 \\ 0 & -2 & -5 \end{bmatrix} + \begin{bmatrix} -1 & 3 & 4 \\ 0 & -2 & -5 \end{bmatrix} + \begin{bmatrix} -1 & 3 & 4 \\ 0 & -2 & -5 \end{bmatrix} + \begin{bmatrix} -1 & 3 & 4 \\ 0 & -2 & -5 \end{bmatrix}$



# PRE CALCULUS BELLRINGER

## FRIDAY 10/3/14

Find the horizontal and vertical asymptotes and holes in the graph of the function.

1.  $f(x) = \frac{x^2 - 4x + 3}{-x^2 + 2x + 3}$

2.  $g(x) = \frac{2x^2 - x - 10}{x^2 + 2x - 8}$

Divide.

3.  $f(x) = \frac{x^2 - 1}{x}$

4.  $f(x) = \frac{4x^2 + 2x}{x - 2}$

# ALGEBRA 2 BELLRINGER FRIDAY 10/3/14 & MONDAY 10/6/14

Find the inverse of each matrix, if it exists.

1.  $\begin{bmatrix} -2 & 1 & -1 \\ 2 & 0 & 4 \\ 0 & 2 & 5 \end{bmatrix}$       21.  $\begin{bmatrix} 2 & 0 & -1 \\ -1 & -1 & 1 \\ 3 & 2 & 0 \end{bmatrix}$       22.  $\begin{bmatrix} 0 & 0 & 2 \\ 1 & 4 & -2 \\ 3 & -2 & 1 \end{bmatrix}$       23.  $\begin{bmatrix} 1 & 2 & 6 \\ 1 & -1 & 0 \\ 1 & 0 & 2 \end{bmatrix}$

EVALUATE THE DETERMINANT OF EACH MATRIX

a.  $\begin{bmatrix} 1 & 2 & 3 \\ 1 & 2 & 3 \\ 1 & 2 & 3 \end{bmatrix}$       b.  $\begin{bmatrix} -1 & -2 & -3 \\ -3 & -2 & -1 \\ -1 & -2 & -3 \end{bmatrix}$       c.  $\begin{bmatrix} 1 & 2 & 3 \\ 2 & 3 & 1 \\ 1 & 2 & 3 \end{bmatrix}$       d.  $\begin{bmatrix} -1 & 2 & -3 \\ 2 & -3 & -1 \\ -1 & 2 & -3 \end{bmatrix}$

ALGEBRA 2 BELLRINGER  
TUESDAY 10/7/14 & WEDNESDAY  
10/8/14

GET OUT YOUR HOMEWORK  
(PG 371 #1-15 ALL) AND  
ENTER THEM IN THE  
CALCULATORS. I WILL TAKE  
THEM UP IN 15 MINUTES.

PRE CAL BELLRINGER 10/9/14

USE THE BINOMIAL THEOREM TO  
EXPAND  $(x^2 + 3)^6$

# ALGEBRA 2 BELLRINGER THURSDAY 10/9/14 & FRIDAY 10/10/14

MATRIX A REPRESENTS THE AMOUNT OF CLOTHES I PURCHASED AT THE MALL ON 3 DIFFERENT TRIPS. MATRIX B REPRESENTS THE PRICE OF EACH ITEM OF CLOTHING:

$$A = \begin{matrix} & 1 & 2 & 3 \\ & 1 & 2 & 3 \\ & 0 & 2 & 2 \\ & 3 & 3 & 1 \end{matrix}$$

$$B = \begin{matrix} & 15 & 20 \\ & 25 & 30 \\ & 35 & 45 \end{matrix}$$

FIND THE AMOUNT THAT I SPENT ON EACH TRIP

# PRE CAL BELLRINGER MONDAY

## 10/13/14

Sketch the graphs of  $y = x^5$  and  $f(x) = x^5 - 1$  on the same set of axes.

Describe the right-hand and left-hand behavior of the graph of  $f(x) = 3 - 2x^4$ .

Find all the real zeros of the function  $f(x) = 2x^4 - 5x^3 + 2x^2$ . Then determine the multiplicity of each zero.

Sketch the graph of  $f(x) = x^3 - 4x$ .

# SMUGI 10/16/14

1. WRITE THE EQUATION OF THE CIRCLE WITH CENTER  $(0, -2)$  AND RADIUS OF 8 IN STANDARD FORM
2. WRITE THE EQUATION OF A PARABOLA WITH  $a = 2$  AND A VERTEX OF  $(-1, 2)$  AND IS UPSIDE DOWN

# ALGEBRA 2 BELLRINGER

10/29/14

- 1. WRITE THE EQUATION OF THE CIRCLE WITH CENTER  $(-1,4)$  AND RADIUS OF 11 IN STANDARD FORM**
- 2. WRITE THE EQUATION OF A PARABOLA WITH  $a = 3$  AND A VERTEX OF  $(4, -2)$  AND IS UPSIDE DOWN**



# ALGEBRA 2 BELLRINGER FRIDAY

## 10/31/14 & MONDAY 11/3/14

**1. WRITE THIS EQUATION OF THIS CIRCLE IN STANDARD FORM IN ORDER TO DETERMINE THE CENTER AND RADIUS. THEN GRAPH THE CIRCLE.**

$$+ \quad - \quad - \quad + \quad =$$

**2. DETERMINE THE CENTER OF THIS ELLIPSE:**

$$\frac{( + )}{\quad} + \frac{( - )}{\quad} = 1$$

**3. DETERMINE THE CENTER OF THIS HYPERBOLA:**

$$\frac{( + )}{\quad} - \frac{( - )}{\quad} = 1$$

# PRE CAL BELLRINGER 10/31/14 HAPPY HALLOWEEN!!!!

## WARM-UP EXERCISES

Evaluate the expression.

1.  $\log_7 49$

2.  $\log 0.001$

3.  $\ln \frac{1}{e^2}$

4.  $\log_{16} 2$

Simplify the expression.

5.  $3^2(3^x)$

6.  $\frac{5^x}{5^y}$

# ALGEBRA 2 BELLRINGER WEDNESDAY

1. SIMPLIFY USING EXPONENT RULES: 11/5/14 & THURSDAY 11/6/14

$$6\sqrt[4]{5}$$

2. SIMPLIFY USING EXPONENT RULES

$$\frac{m^0 - m^{-\frac{1}{3}} - 1}{\left(m^{-\frac{5}{4}}\right)^2}$$

3.. Condense the expression  $\frac{1}{2} \log x - \log (x + 1)$  to the logarithm of a single quantity.

4.

Expand the expression  $\ln \frac{2x}{y^3}$ .

# ALGEBRA 2 BELLRINGER TUESDAY 11/11/14 & WEDNESDAY 11/12/14

1. IF YOU MOVED A CIRCLE WITH THIS EQUATION:  $(x + 2)^2 + (y - 4)^2 = 16$  UP FOUR UNITS AND LEFT 3 UNITS, WHAT WOULD THE EQUATION OF THIS NEW CIRCLE BE?

(HINT: GRAPH THIS CIRCLE FIRST, THEN MOVE THE CENTER)

2. DESCRIBE WHAT TRANSFORMATIONS TOOK PLACE FROM THE EQUATION OF THIS CONIC SECTION:

$f(x) = x^2 - 4x + 4$  TO THIS ONE  $f(x) = (x - 2)^2 + 1$

HINT: WHAT IS THE VERTEX OF THE 1<sup>ST</sup> ONE? AND THE 2<sup>ND</sup>?

3. USE THE INFORMATION PROVIDED TO WRITE THE VERTEX FORM OF THIS PARABOLA:  $y = -x^2 - 6x + 9$  HINT:  $x = -3$

4. NOW GRAPH THE PARABOLA FROM #3

# ALGEBRA 2 BELLRINGER TUESDAY 11/11/14 & WEDNESDAY 11/12/14 TAKE 2

- 1. IF YOU MOVED A CIRCLE WITH THIS EQUATION:  $(x - h)^2 + (y - k)^2 = r^2$  DOWN 5 UNITS AND RIGHT 2 UNITS, WHAT WOULD THE EQUATION OF THIS NEW CIRCLE BE?**
- 2. DESCRIBE WHAT TRANSFORMATIONS TOOK PLACE FROM THE EQUATION OF THIS CONIC SECTION:  
 $f(x) = (x - h)^2 + k$  TO THIS ONE  $f(x) = -(x - h)^2 + k$**
- 3. USE THE INFORMATION PROVIDED TO WRITE THE VERTEX FORM OF THIS PARABOLA:  $y = -x^2 + 4x - 5$**
- 4. NOW GRAPH THE PARABOLA FROM #3**

# PRECALCULUS BELLRINGER

## TUESDAY 11/11/14

1. Use the properties of logs to expand this expression: **ln**

$$\sqrt{\quad}$$

2. Use the properties of logs to condense this expression:

$$2[\ln x - \ln(x + 1) - \ln(x - 1)]$$

3. Use the properties of exponents to simplify this expression:

$$\left( \frac{x^{-\frac{5}{3}} y^{-1} \cdot y x^{-\frac{5}{3}}}{x^{\frac{5}{3}} y^{\frac{7}{4}}} \right)^{-1}$$

# PRECALCULUS BELLRINGER

## THURSDAY 11/13/14

**1. USE THE PROPERTIES OF LOGARITHMS TO EXPAND**

**THIS EXPRESSION:**  $\frac{\cdot \sqrt{\quad}}{\quad}$

**2. USE THE PROPERTIES OF LOGARITHMS TO CONDENSE THIS TO A SINGLE LOGARITHM:**

$+ ( \quad - \sqrt{\quad} )$

**3. USE THE PROPERTIES OF EXPONENTS TO SIMPLIFY:**

$$\frac{(ba^3)^2}{a^0 b^{\frac{3}{2}} \cdot a^{-\frac{1}{2}} b^{-\frac{3}{2}}}$$

# ALGEBRA 2 BELLRINGER THURSDAY 11/13/14 & FRIDAY 11/14/14

1. IF YOU MOVED A CIRCLE WITH THIS EQUATION:  $(x + 3)^2 + (y + 2)^2 = 16$  DOWN 10 UNITS AND RIGHT 6 UNITS, WHAT WOULD THE EQUATION OF THIS NEW CIRCLE BE?

2. DESCRIBE WHAT TRANSFORMATIONS TOOK PLACE FROM THE EQUATION OF THIS CONIC SECTION:

$f(x) = (x + 3)^2 + 2$  TO THIS ONE  $f(x) = -(x - 3)^2 + 2$

(hint: what is the vertex of the 1<sup>st</sup>? And the 2<sup>nd</sup>?)

3. WHICH TRANSFORMATIONS CAN BE PERFORMED ON THE GRAPH OF  $f(x) = (x + 3)^2 + 2$  THAT RESULT IN THE GRAPH OF

$f'(x) = -x^2 - 6x - 7$

4. WHAT ARE THE DOMAIN AND RANGE OF BOTH PARABOLAS IN #2?

5. WHAT ARE THE DOMAIN AND RANGE OF BOTH PARABOLAS IN #3?



# ALGEBRA 2 BELLRINGER THURSDAY

11/13/14 & FRIDAY 11/14/14

## TAKE 2

- 1. IF YOU MOVED A CIRCLE WITH THIS EQUATION:  $(x - 3)^2 + (y + 2)^2 = 16$  UP 7 UNITS AND LEFT 2 UNITS, WHAT WOULD THE EQUATION OF THIS NEW CIRCLE BE?**
- 2. DESCRIBE WHAT TRANSFORMATIONS TOOK PLACE FROM THE EQUATION OF THIS CONIC SECTION:  $f(x) = -(x - 2)^2 - 3$  TO THIS ONE  $f(x) = (x + 1)^2 + 1$**
- 3. WHICH TRANSFORMATIONS CAN BE PERFORMED ON THE GRAPH OF  $f(x) = x^2 - 4x + 4$  THAT RESULT IN THE GRAPH OF  $f'(x) = -x^2 + 2x - 1$**
- 4. WHAT ARE THE DOMAIN AND RANGE OF BOTH PARABOLAS IN #2?**
- 5. WHAT ARE THE DOMAIN AND RANGE OF BOTH PARABOLAS IN #3?**

# ALGEBRA 2 BELLRINGER MONDAY 11/17/14 & WEDNESDAY 11/19/14

1. IF YOU MOVED A CIRCLE WITH THIS EQUATION:  $(x - 2)^2 + (y + 3)^2 = 16$  UP 3 UNITS AND RIGHT 10 UNITS, WHAT WOULD THE EQUATION OF THIS NEW CIRCLE BE?

2. DESCRIBE WHAT TRANSFORMATIONS TOOK PLACE FROM THE EQUATION OF THIS CONIC SECTION:

$$f(x) = x^2 - 4x + 11 \quad \text{TO THIS ONE } f(x) = (x + 1)^2 + 11$$

3. WHICH TRANSFORMATIONS CAN BE PERFORMED ON THE GRAPH OF  $f(x) = (x - 2)^2 + 1$  THAT RESULT IN THE GRAPH OF  $f'(x) = -x^2 - 4x - 4$ ?

4. WHAT ARE THE DOMAIN AND RANGE OF THIS PARABOLA?

$$f(x) = (x - 2)^2 + 1$$

# PRECALCULUS BELLRINGER

## THURSDAY 11/20/14

1. In a research experiment, a population of fruit flies is increasing according to the law of exponential growth.  $y =$  After 2 days there are 100 flies, and after 4 days there are 300 flies. How many flies will there be after 5 days?

(hint: let  $y$  be the number of flies at time,  $x$ . Solve the 1<sup>st</sup> one – then plug into the second one to solve for  $a$ )

## 2. USE THE PROPERTIES OF EXPONENTS TO SIMPLIFY:

$$\frac{u^{\frac{1}{2}} v^{\frac{7}{4}} \cdot u^0 v^{\frac{7}{4}}}{(u^{-2})^{\frac{1}{3}}}$$

# ALGEBRA 2 BELLRINGER MONDAY 11/24/14 & TUESDAY 11/25/14

$$F(X) = 2X + 1$$

$$G(X) = 3X - 2$$

**1 FIND  $(F + G)(X)$**

**2 FIND  $(F - G)(X)$**

**3 FIND  $(F * G)(X)$**

**4 FIND  $\left(\frac{\quad}{\quad}\right)(\quad)$**

**5 FIND  $(F \circ G)(X)$**

**6 FIND  $(G \circ F)(X)$**

# ALGEBRA 2 BELLRINGER MONDAY 12/1/14 & TUESDAY 12/2/14

$$F(X) = X - 6$$

$$G(X) = 2X + 5$$

**1 FIND  $(F + G)(X)$**

**2 FIND  $(F - G)(X)$**

**3 FIND  $(F * G)(X)$**

**4 FIND  $\left(\frac{\quad}{\quad}\right)(\quad)$**

**5 FIND  $(F \circ G)(X)$**

**6 FIND  $(G \circ F)(X)$**

# ALGEBRA 2 BELLRINGER WEDNESDAY 12/3/14 & THURSDAY 12/4/14

$$F(X) = 2X + 1$$

$$G(X) = X - 2$$

**1 FIND  $(F + G)(X)$**

**2 FIND  $(F - G)(X)$**

**3 FIND  $(F * G)(X)$**

**4 FIND  $\left(\frac{\quad}{\quad}\right)(\quad)$**

**5 FIND  $(F \circ G)(X)$**

**6 FIND  $(G \circ F)(-2)$**

# ALGEBRA 2 BELLRINGER FRIDAY 12/5/14 & MONDAY 12/8/14

- 1. DETERMINE THE DOMAIN AND RANGE:  $y = (x + 2)^2 + 3$**
- 2. WHAT IS THE VERTEX OF THE EQUATION IN #1?**
- 3. WHAT SHAPE IS THE GRAPH OF THE EQUATION IN #1?**
- 4. IF YOU REFLECTED THIS EQUATION ACROSS THE Y-AXIS, WHAT WOULD THE VERTEX BE?**

# ALGEBRA 2 BELLRINGER

## TUESDAY 12/9/14 & WEDNESDAY 12/10/14

- WHAT ARE THE CENTER AND THE RADIUS OF THIS CIRCLE?

$$x^2 + y^2 - 22x + 10y + 130 = 0$$