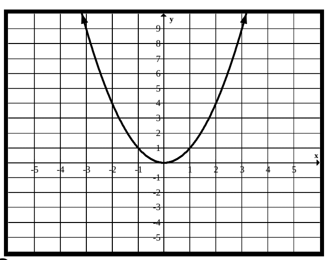
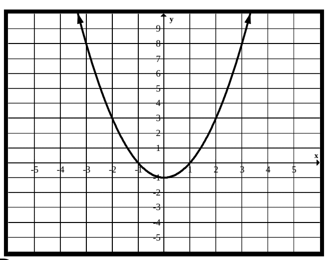
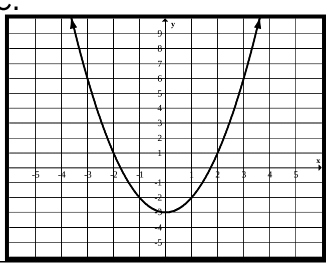
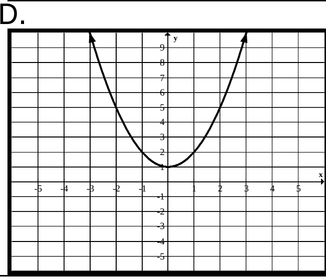
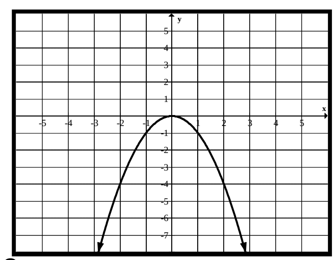
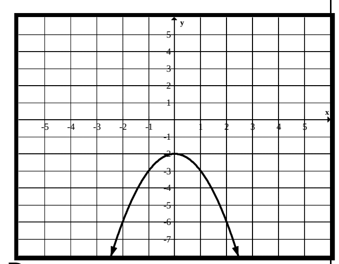
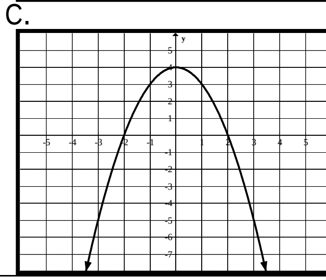
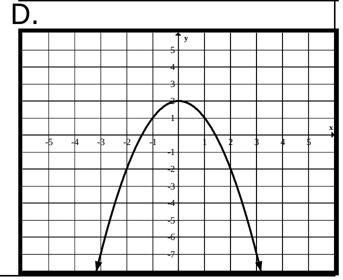
Name: ____ **Unit 9 & 10 Test Corrections DUE** __________

Visit http://goo.gl/1b15dd or scan the QR code. Click on the correct test, then watch the problem-solving videos and take notes. Then, complete the six re-test problems in the right column. Use the problems in the left column and the steps to solve to guide you. You may earn up to half points back on your original test grade.

If you are not eligible for test corrections, you may attend a Wednesday school to regain eligibility. Please have the Wednesday school teacher sign below. Date: ______________ Signature: ____

The Example Problem	**Steps to Solve**	**Problem for You to Complete**
8. The length of a rectangular garden is 5 less than twice the width. Find the length of the garden if the area is 88 square feet. A. 2 feet B. 5 feet C. 8 feet D. 11 feet	1. Draw **AND** label a picture. 2. Write the applicable formula. 3. Substitute your numbers and picture labels into the formula. 4. Make one side of the equation equal zero. 5. Put the equation in the calculator in **Y=**. 6. Use the table or graph to find the x-value when y=0. 7. Use the x-value to answer the question being asked.	1. The length of a rectangle is 3 cm more than the width. The area is 70 cm^2. Find the dimensions of the rectangle.
10. Which of the following does not show a function $y = x^2 + c$ when $c < 1$? A.  B.  C.  D. 	1. Remember what changing the a and c values does in a quadratic equation of the form: $y = ax^2 + c$ - "a" changes the width of the parabola (FAT Fractions!) and a negative "a" flips the graph. - "c" translates the graph up or down 2. Read carefully – are there any key words like NOT? 3. If there is no line under the inequality, then your c value cannot be that number!	2. Which of the following graphs shows a function $y = -x^2 + c$ when $c > 2$? A.  B.  C.  D. 

13. What are the x-intercepts of the graph of the quadratic function $f(x) = 5x^2 + 4x - 1$?

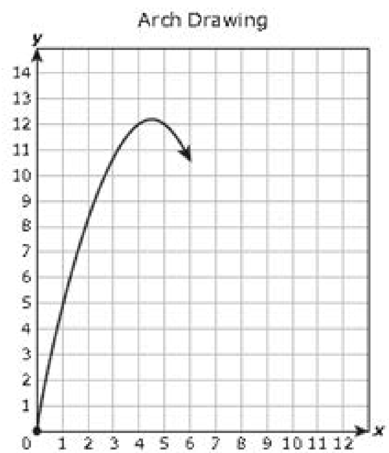
A. $\frac{1}{5}$ and -1
B. $-\frac{1}{5}$ and 1
C. 0 and -1
D. $-\frac{2}{5}$ and $1\frac{2}{5}$

1. Make sure your equation is solved for y. Type it into y_1= on your calculator. Then type y_2=0.
2. Press GRAPH. Can you see both x-intercepts? If not, adjust your window.
3. Mouse close to your x-intercept. Press 2^{ND} TRACE 5:intersect and ENTER three times.
4. If there is another zero, repeat step 3. Be careful – sometimes the solution is a fraction!

3. What are the x-intercepts of the graph of the quadratic function $f(x) = 4x^2 + 15x - 4$?

A. 0 and -4
B. $\frac{1}{4}$ and -4
C. 0 and 4
D. $-\frac{1}{4}$ and 4

16. An architecture student is drawing a graph of an arch. As shown below, the arch has the shape of a parabola that begins at the origin and has a vertex at (4.6, 12.2).



Other than the origin, at which point will the graph intersect the x-axis?

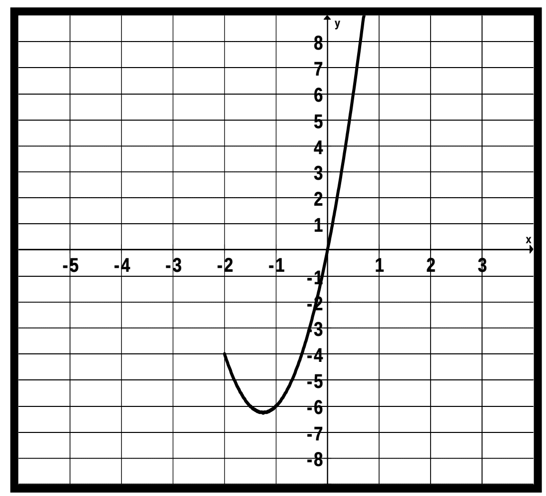
A. (12.2, 0)
B. (9.2, 0)
C. (4.6, 0)
D. (10.6, 0)

1. The line of symmetry divides a parabola in half. The equation to find the line is $x = \frac{-b}{2a}$. It is also the x-coordinate of the vertex!

2. The x-intercepts of a graph are equal distances on either side of the axis of symmetry.

3. OR continue your graph to find an approximate solution!

4. Part of the graph of a quadratic equation is shown below. If the line of symmetry for this quadratic equation is $x = -1.25$, between which two integers will the other part of the graph intersect the *x*-axis?



A. 0 and 1
B. 2 and 3
C. -3 and -4
D. -2 and -3

17. What are the x-intercepts of the graph of the quadratic function $0 = x^2 - 7 - 4x$? A. $\frac{-4 \pm \sqrt{44}}{2}$ B. $\frac{-7 \pm \sqrt{65}}{2}$ C. $\frac{4 \pm \sqrt{44}}{2}$ D. $\frac{7 \pm \sqrt{65}}{2}$	1. Put the equation in Standard Form: $0 = Ax^2 + Bx + C$. 2. Label the A, B, and C. 3. Plug into the quadratic formula: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ and simplify.	5. What are the x-intercepts of the graph of the quadratic function $0 = x^2 + 2 - 5x$? A. $\frac{2 \pm \sqrt{17}}{2}$ B. $\frac{-2 \pm \sqrt{33}}{2}$ C. $\frac{5 \pm \sqrt{17}}{2}$ D. $\frac{-5 \pm \sqrt{33}}{2}$
9. Which of the following statements best describes the effects of changing the 2 to a ½ in the exponential function *f(x) = 2*3^x^?* A. The graph would become wider. B. The graph would become narrower. C. The graph would change from decreasing to increasing. D. The graph would change from increasing to decreasing.	1. Remember that in the general exponential equation $y = ab^x$ - Increasing the value of **a** makes the graph narrower. - Decreasing the value of **a** makes the graph wider - Making **a** negative reflects the graph across the x-axis - If $b > 1$ the graph is increasing, and if $0 < b < 1$ the graph is decreasing (IF a is positive) OR 1. Press [y=] in your calculator. 2. Type the original equation into [$y_1 =$] 3. Write the new equation changing the indicated values and type this new equation into [$y_2 =$]. Scroll all the way to the left and press [Enter] one time to make the second curve bold and easier to compare to the first curve. 4. Compare the two graphs and choose the answer choice that best describes the change in the graphs.	6. Which of the following statements best describes the effects of changing the 3 to a $\frac{1}{3}$ in the exponential function *f(x) = 2*3^x^?* A. The graph would become wider. B. The graph would become narrower. C. The graph would change from decreasing to increasing. D. The graph would change from increasing to decreasing

10. The table below shows some values for the function. If $f(x) = ab^x$ for some constants *a* and *b*, what is the value of *a*?

x	-1	0	1
$f(x)$	1	2	4

A. 4
B. 2
C. 0
D. ½

1. Plug the points into Stat-edit (x's in L_1 and y's in L_2)
2. Then, Stat >Calc, and find ExpReg. Click enter until you see the equation.
3. Circle the value for *a* that you get from the calculator.

7. The table shows an exponential function in the form $f(x) = ab^x$. What is the value of b in that equation?

x	0	1	2
$f(x)$	4	.8	.16

18. A farmer uses a lever to move a large rock. The force required to move the rock varies inversely with the distance from the pivot point to the point the force is applied. A force of 50 pounds applied to the lever 36 inches from the pivot point of the lever will move the rock. Which function models the relationship between *F*, the amount of force applied to the lever, and *d*, the distance of the applied force from the pivot point?

A. $d = \frac{F}{1{,}800}$

B. $d = \frac{86}{F}$

C. $F = \frac{1{,}800}{d}$

D. $F = \frac{d}{86}$

1. Find out whether you have an inverse or direct variation problem.
2. Direct: set up the proportion regularly: $\frac{x_1}{x_2} = \frac{y_1}{y_2}$
   Inverse: set up the proportion with the y-values flipped: $\frac{x_1}{x_2} = \frac{y_2}{y_1}$
3. Then decide what the x's represent and what the y's represent.
4. Plug in the numbers you know and cross multiply.

8. According to Hooke's Law, the force needed to stretch a spring is directly proportional to the amount the spring is stretched. If fifty pounds of force stretches a spring five inches, what function models the relationship between F, the amount of force applied, and s, the amount the spring is stretched?

A. $F = 10s$

B. $s = \frac{10}{F}$

C. $F = \frac{10}{s}$

D. $s = 10F$