

To all of Mr. Wing's Algebra 2 CC Students

Obviously, this is a unique circumstance and we don't know exactly what is going to happen moving forward. In regards to the content that you have learned in this course, we are in a good place. Instead of trying to teach new material, I am encouraging you to practice the concepts that we have already learned.

I have assigned a Regents Review packet. Keep in mind, this will **NOT** be graded.

I would suggest that you complete the problems in this packet by March 29th, 2020. I will be available for questions by e-mail and I will still have this material posted on my webpage. Please check e-mail and my webpage regularly and I will keep you updated as frequently as possible.

Again, just try your best and I know that we will be in a good place when we return to school.

1.) Given i is the imaginary unit, $(2 - yi)^2$ in simplest form is

2.) Solve algebraically for x : $2x^2 + 3x + 2 = 0$

3.) Sally's high school is planning their spring musical. The revenue, R , generated can be determined by the function $R(t) = -33t^2 + 360t$, where t represents the price of a ticket. The production cost, C , of the musical is represented by the function $C(t) = 700 + 5t$.

What is the highest ticket price, *to the nearest dollar*, they can charge in order to *not* lose money on the event?

- (a) $t = 3$ (b) $t = 5$ (c) $t = 8$ (d) $t = 11$

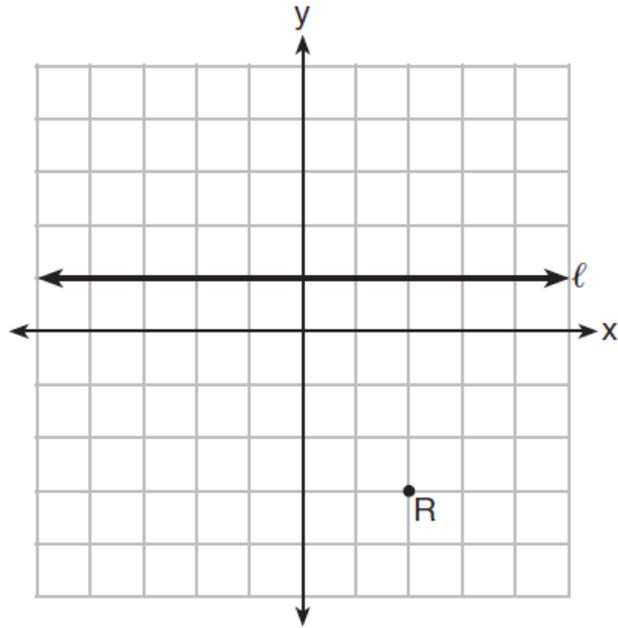
4.) Which equation represents the set of points equidistant from line l and point R shown on the graph below.

(a) $y = -\frac{1}{8}(x+2)^2 + 1$

(b) $y = -\frac{1}{8}(x+2)^2 - 1$

(c) $y = -\frac{1}{8}(x-2)^2 + 1$

(d) $y = -\frac{1}{8}(x-2)^2 - 1$



5.) **Explain** what a rational exponent, such as $\frac{5}{2}$ means. Use this explanation to evaluate $9^{\frac{5}{2}}$.

6.) Biologists are studying a new bacterium. They create a culture of 100 of the bacteria and anticipate that the number of bacteria will **double** every 30 hours. Write an equation for the number of bacteria, B , in terms of the number of hours, t , since the experiment began.

7.) Solve algebraically for x : $x = \sqrt{3x+40}$

8.) Find the **inverse** of the function: $y = 4x + 5$

9.) Given $x \neq -2$, the expression $\frac{2x^2 + 5x + 8}{x + 2}$ is equivalent to

(a) $2x^2 + \frac{9}{x+2}$

(c) $2x + 1 + \frac{6}{x+2}$

(b) $2x + \frac{7}{x+2}$

(d) $2x + 9 - \frac{10}{x+2}$

10.) The table below gives air pressure in kPa at selected altitudes above sea level measured in kilometers.

x	Altitude (km)	0	1	2	3	4	5
y	Air Pressure (kPa)	101	90	79	70	62	54

a. Write an exponential regression equation that models these data rounding all values *to the nearest thousandth*.

b. Use this equation to algebraically determine the altitude, *to the nearest hundredth* of a kilometer, when the air pressure is 29 kPa.

11.) The table below shows the number of hours of daylight on the first day of each month in Rochester, N.Y.

Given the data, what is the average rate of change in hours, of daylight per month from January 1st to April 1st?

Month	Hours of Daylight
Jan.	9.4
Feb.	10.6
March	11.9
April	13.9
May	14.7
June	15.4
July	15.1
Aug.	13.9
Sept.	12.5
Oct.	11.1
Nov.	9.7
Dec.	9.0