

## Algebra 2 Units 8-11 Review

## Unit 8

1.	Subtract. For what values of $x$ is the expression undefined? $\frac{-9x^2 + 6x + 7}{2x - 3} - \frac{x^2 + 8x + 17}{2x - 3}$	2.	Divide. $\frac{3x^2 + 6x - 9}{x^2 + 7x + 10} \div \frac{3x^2 + 15x + 18}{x^2 + 2x - 15}$
3.	Identify the holes in the graph. $f(x) = \frac{x^2 + 3x - 10}{x + 5}$	4.	Simplify. Assume that the answer is a real number. $\sqrt[6]{729m^{18}n^0p^{24}}$
5.	Simplify and identify any values of $x$ for which the expression is undefined. $\frac{x^2 - 8x + 12}{x^2 - 36}$	6.	The number of candy bars and vegetables varies inversely. If there can be 12 vegetables and 3 candy bars, how many candy bars would there need to be to have 2 vegetables?
7.	Simplify. $32^{\frac{3}{5}}$	8.	Simplify. Assume all expressions are defined. $\frac{\frac{x-2}{3} + \frac{1}{x+3}}{\frac{x-2}{x+3}}$
9.	Add. $\frac{x+4}{x+3} + \frac{5x+1}{x^2+6x+9}$	10.	Solve. $\frac{2x}{x^2+5x+6} = \frac{3x}{x^2+7x+10}$

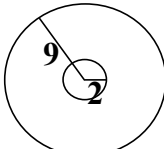
## Unit 9

11.	Write the composite function $r(t(x))$ . $r(x) =  3x - 4  \quad t(x) = \frac{x+1}{3}$	12.	$f(x) = 5x^2 - 7 \quad g(x) = \frac{2x^2}{9}$ Determine $g(f(-1))$ .
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**Unit 10**

13.	Identify the type of conic section. $3x^2 - 8y^2 + 2x + 7y - 8 = 0$	14.	Identify the type of conic section. $y + 6 = \frac{3}{8}(x - 2)^2$
15.	Write the equation of the circle with a radius of 8 and a center at (-3, 9).	16.	Write the conic equation in standard form. Identify the type of conic and all its parts. $3x^2 + 8y^2 = 48$
17.	Write an equation in standard form for an ellipse with center (2, 1), vertex (6, 1), and focus (5, 1).	18.	Determine the equation of the parabola with its focus at (-3, 1) and directrix at $y = 4$ .

**Unit 11**

19.	Determine the standard deviation for the data. {-8, 2, 4, 5, -4, -5}	20.	There are 4 DVDs being played in a movie marathon. How many different ways can they be played?
21.	A drawer contains 3 red T-shirts, 4 blue T-shirts, and one graphic tee. If Eric picks two shirts at random, what is the probability that he will pick a blue shirt and a shirt that is not the graphic tee? Express your answer as a fraction.	22.	When rolling a 6-sided number cube, what is the probability of rolling a number that is an even factor of 10? Write your answer as a fraction in the simplest form.
23.	A magician pulls a card from a traditional deck of 52 cards, 36 of which are number cards. He then puts the card back, shuffles and picks again. What is the probability that he will pick a card that is not a number card and then pick the same card? Express your answer as a decimal rounded to the nearest hundredth.	24.	Determine the probability that an object chosen at random from a box containing 6 black pens, 2 red pens, 3 red pencils and a green crayon will be red or a pen.
25.	What is the probability that a point chosen at random will be in the bigger circle, but not in the center circle? Express your answer as a percent rounded to the nearest tenth. 	26.	George is picking 9 songs to put on his playlist. If he has 15 options, how many ways can he pick those 9 songs?