HONORS I LEARNING TARGET **2nd Semester** STUDY GUIDE SHEET Name: _____

8.7 – factor and solve $y = ax^2 + bx + c$

9.2 – graph $y = ax^2 + bx + c$ by factoring first

$y = 2x^2 + 5x + 3$

$0 = 2x^2 + 5x + 3$

$0 = (2x+3)(x+1)$

$2x+3=0$ or $x+1=0$

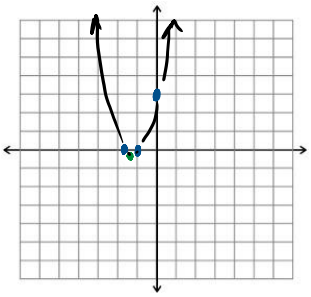
$2x = -3$ $\quad x = -1$

$x = -1.5$

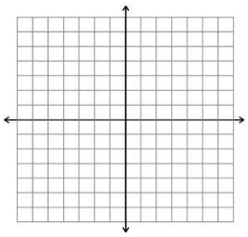
$V_x = \frac{-1 + -1.5}{2} = -1.25$

$V_y = -0.125$

y-int: $(0,3)$



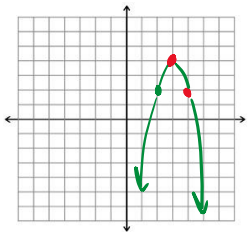
9.1 – graph $y = ax^2 + bx + c$ by finding the vertex using –b/2a



9.3b – Sketch a quadratic graph if given vertex form $y = a(x-h)^2 + k$

$y = 2(x-3)^2 + 4$

Vertex: $(3,4)$



8.9 – solve quadratics using square roots

9.4 – solve quadratics by completing the square

$x^2 + 10x = 24$

	x	$+5$
x	x^2	$5x$
$+5$	$5x$	$+25$

$= 24 + 25$

$\sqrt{(x+5)^2} = \sqrt{49}$

$x+5 = -7$ $\quad x+5 = 7$

$x = -12$ $\quad x = 2$

9.5 – solve quadratics by using the quadratic formula and use the discriminant to state # of solutions

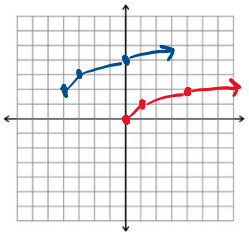
10.1 – graph square root functions

$y = \sqrt{x}$

x	0	1	4	9
y	0	1	2	3

$y = \sqrt{x+4} + 2$

left 4, up 2



10.2 – simplify radical expressions

10.4 – solve radical equations

$8\sqrt{2x-6} + 12 = 28$

$8\sqrt{2x-6} = 16$

$(\sqrt{2x-6})^2 = 2^2$

$2x - 6 = 4$

$2x = 10$

$x = 5$

10.5 – apply and solve with the Pythagorean Theorem

10.6a – set up and solve trig ratios SOH-CAH-TOA

$\sin(a) = \frac{opp}{hyp}$

$\cos(a) = \frac{adj}{hyp}$

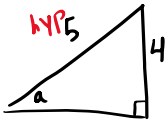
$\tan(a) = \frac{opp}{adj}$

$x \cdot \tan(24) = \frac{14}{x} \cdot x$

$x \cdot \tan(24) = 14$

$x = \frac{14}{\tan(24)} = 31.44$

10.6b – solve with inverse trig function



$\sin(a) = \frac{4}{5}$

$\sin^{-1}\left(\frac{4}{5}\right) = a$

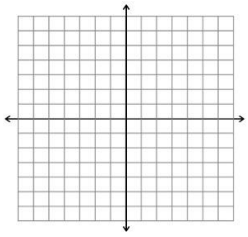
$53.1^\circ = a$

11.1 – write an inverse variation equation

If it takes 1.5 hrs going 80 mph to get to Missoula, how long if going 70 mph?

$\frac{1.5}{x} = \frac{70}{80}$

$x = 1.7$ hrs

11.2 – graph rational functions and determine horizontal and vertical asymptotes 	11.3 – simplify rational expressions	11.4/11.7 - Multiply and divide rational expressions and complex fractions $\frac{x^2+7x+12}{16x^2} \div \frac{x+3}{2x}$ $\frac{(x+3)(x+4)}{16x^2} \cdot \frac{2x}{(x+3)} = \frac{(x+4)}{8x}$
11.5 – divide polynomials	11.6/11.7 - Add and subtract rational expressions	12.1 - determine a sampling method and if it is biased or unbiased
12.2 - identify a sample and population and calculate the mean & standard deviation for a population	12.3 - identify skewness and appropriateness to create box plots and histograms to display data	12.4 - compare sets of data using either box plots or histograms depending on the distribution
12.6 - calculate permutations, combinations and decide when to use each	12.7 - calculate probability of compound events	12.8 - construct probability distributions and calculate expected values
Anything else extra.		