Algebra 1 Final Review 2014

** You will be able to have ***ONE*** 4x6 note card (Front and Back) on your final!**

- Prioritize your studies by focusing on targets you scored low on 1st – there is a place to note old scores
- Each target is given at least one problem in this packet
- Review problems are listed next to each target – You will need your book – always check answers!
- Answer keys will be available in the classroom and online at www.mahonymath.weebly.com
- After school help is available T/W/Th 2:45-4

Targets	Learning Targets	Ch 1 Retake Problems
T 1-1	I can move between algebraic expressions and verbal expressions.	1.1 Pg. 7 #11-30all
T 1-2	I can use dimensional analysis to convert between units.	Dimensional Analysis Worksheet
T 1-3	I can use the convention of "order of operations" to perform calculations and simplify algebraic expressions.	1.2 Pg. 13 #39-54all

1. Write and algebraic expression to go with this sentence:
   "The difference between the cube of a number and three times that same number."

   $x^3 - 3x$

2. Convert 34 meters per hour to millimeters per second. (1 meter = 100 cm, 1 cm = 10 mm)

   9.44 mm per sec.

3. Evaluate: $-9 + \frac{9+21}{3(4+1)} - (-3)$ -4

Targets	Learning Targets	Ch 2 Retake Problems
T 2-2	I can solve multi-step equations.	2.2 Pg. 86 #19-33o, 50-55all 2.3 Pg. 94 #11-22all, 25-29o
T 2-3	I can solve equations with variables on both sides	2.4 Pg. 100 #1-9all, 10-22even
T 2-4	I can interpret and use a proportion to solve a problem.	2.6 Pg. 115 #15-33o, 2.7 Pg. 122 #15-23o, 36-42all

Solve:

1. $\frac{3}{4}q - 7 = 8$ $q = 20$

2. $\frac{3}{12} = \frac{2}{x+6}$ $x = 2$

3. $75 - 9x = 5(-4 + 2x)$ $x = 5$

4. $2(5 - 8x) + 6 = -10 - 16x$ NO SOLUTION

5. orig: 25
   new: 18
   28% Decrease

6. orig: 36
   new: 45
   25% increase

Targets	Ch 3 Learning Target	Ch 3 Problems
T3-1	I can find the slope and rate of change; interpret it in the context of a problem.	3.3 Pg. 177 # 1-13all
T 3-2	I can graph linear equations using a table.	Graphing with Tables Retake Problems Worksheet
T 3-5	I can determine independent and dependent variables in real world situations.	Independent and Dependent Variables RETAKE WKST

For # 1-4, find the slope.

1. $(243, 85), (121, -105)$

$m = \frac{95}{61}$

2. $(-13, 56), (-13, -7)$

$m = \frac{63}{0}$ = undefined

3.

x	y	
-16	-1	
-6	-5	> -4
-1	-7	> -2

(+10 < , +5 <)

$m = \frac{-4}{10} = \frac{-2}{5}$

4. $4x - 5y = 15$

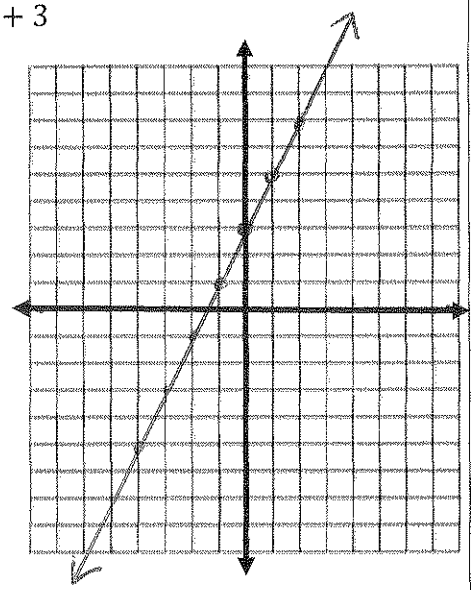
$-5y = -4x + 15$

$y = \frac{4}{5}x - 3$ $\quad m = \frac{4}{5}$

Graph the lines using a table:

5. $y = 2x + 3$

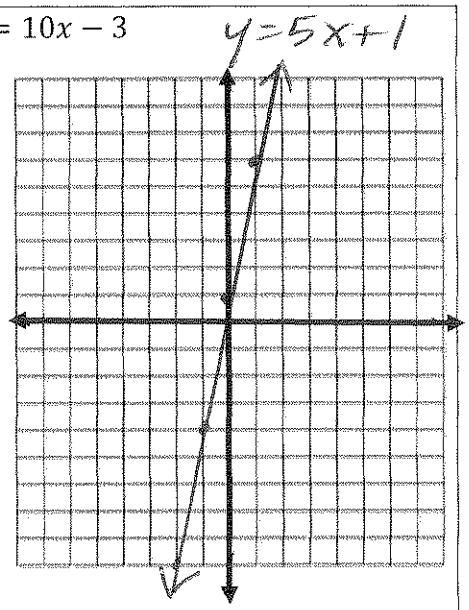
x	y
-1	1
0	3
1	5



6. $2y - 5 = 10x - 3$

$y = 5x + 1$

-1	-4
0	1
1	6



7. Newberg Nickel Arcade charges \$5 to get in and \$0.05 for each game played. The equation $y = 0.05x + 5$ represents the total cost y for x games played. Identify the independent and dependent variables. x: ind y: dep

8. Peter coaches soccer clinics and charges \$15.00 per player. T stands for the total amount of money he makes and P stands for the number of players that sign up. Identify the independent and dependent variables. P: ind T: Dep

Targets	Ch 4 Learning Targets	Ch 4 Problems
T4-1	I can graph equations in slope-intercept form.	Pg. 219 #1-15o

4

Targets	Ch 3 Learning Targets	Ch 4 Retake Problems
T4-1	I can graph equations in slope-intercept form.	Pg. 219 #1-15o
T 4-2	I can write equations in slope-intercept form from real world problems and use the equation to solve problems.	Pg. 229 #1-9all, 24-27all
T 4-4	I can graph scatter plots, write lines of best fit and use them to make predictions	4.5 Retake Worksheet

1. Write an equation in slope-intercept form that has a slope of 4 and passes through (1, 9).

$y = 4x + 5$

2. Write an equation of the line that passes through (-1, 6) and (3, –2).

$y = -2x + 4$

3. Slope: -10
Y-intercept: 0

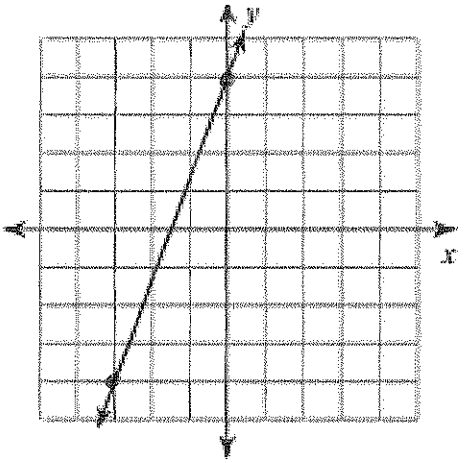
Equation: $y = -10x$

4. Slope: $\frac{5}{6}$
Y-intercept: -8

Equation: $y = \frac{5}{6}x - 8$

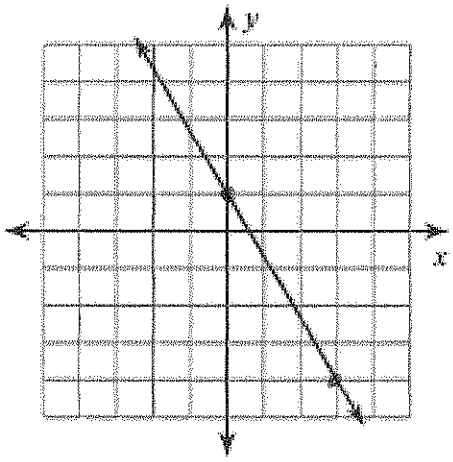
5. Slope: $\frac{8}{3}$
Y-intercept: 4

Equation: $y = \frac{8}{3}x + 4$



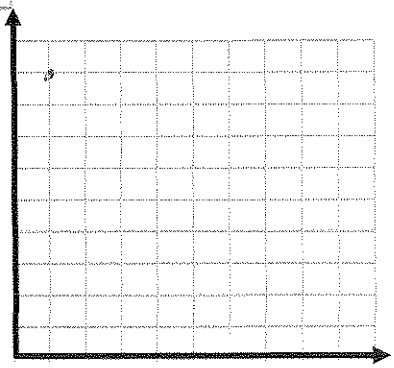
6. Slope: $-\frac{5}{3}$
Y-intercept: 1

Equation: $y = -\frac{5}{3}x + 1$



7. Below is a table relating the age of a person and the percent of their money that they have spend on entertainment. **Make a scatter plot of the data. Label your graph**

Age	30	40	50	60	70	80
Percent Spent on Entertainment	15	13	12	8	6	4



a. Describe the correlation and what it means.

Neg. As you get older you spend less.

b. Draw a line of best fit. List two points on the line.

c. Write an equation for the line of best fit.

$y = -\frac{1}{5}x + 20$

d. Use your equation to predict the percent spent when a person is 20.

$x = 20$ 16% spent on ent at age 20

Targets	**Ch 4 Learning Targets**	**Ch 4 Problems**
TP-1	I can determine if lines are parallel and write equations for parallel lines.	Retake WS
TP-2	I can determine if lines are perpendicular and write equation for perpendicular lines.	Retake WS

State whether the graphs of the following equations are parallel, perpendicular or neither.

1. $y = 2x$
   $y = 2x - 4$

Parallel

2. $2y + 3x = 5$
   $3y - 2x = 5$

$y = -\frac{3}{2}x + \frac{5}{2}$

$y = \frac{2}{3}x + \frac{5}{2}$

perpendicular

3. Write an equation perpendicular to the given line through the point:

$(2, 5)$ *and perpendicular to* $3x + 5y = 7$

$y = -\frac{3}{5}x + \frac{7}{5}$

$m = -\frac{3}{5}$

$-\frac{1}{m} = \frac{5}{3}$

$5 = \frac{5}{3}(2) + b$

$5 = \frac{10}{3} + b$

$b = \frac{5}{3}$

$y = \frac{5}{3}x + \frac{5}{3}$

4. Write and equation parallel to the given line through the point.

$(-6, 5)$*and parallel to* $y = \frac{1}{3}x + 9$.

$m = \frac{1}{3}$

$5 = \frac{1}{3}(-6) + b$

$5 = -2 + b$

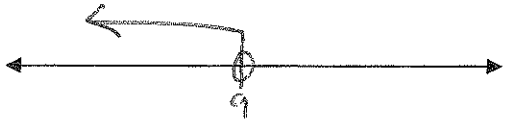
$7 = b$

$y = \frac{1}{3}x + 7$

Targets	Ch 5 Learning Targets	Ch 5 Problems
T5-2	I can solve and verify multiple step inequalities and graph them on a number line.	Pg. 300 #13-21o,29-33, 45
T 5-4	I can solve and graph inequalities with two variables.	Pg. 320 #13-23o, 39, 41

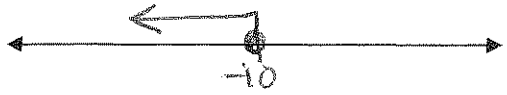
1. $-3 > -4 + \frac{k}{9}$

$k < 9$



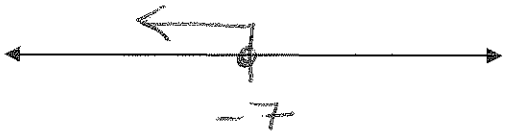
2. $-7 \geq \frac{-4+p}{2}$

$p \leq -10$



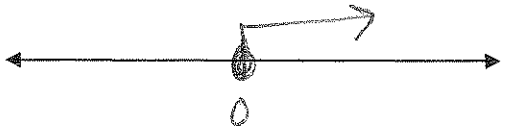
3. $-7(2 + 5x) + 1 \geq 57$

$x \leq -7$



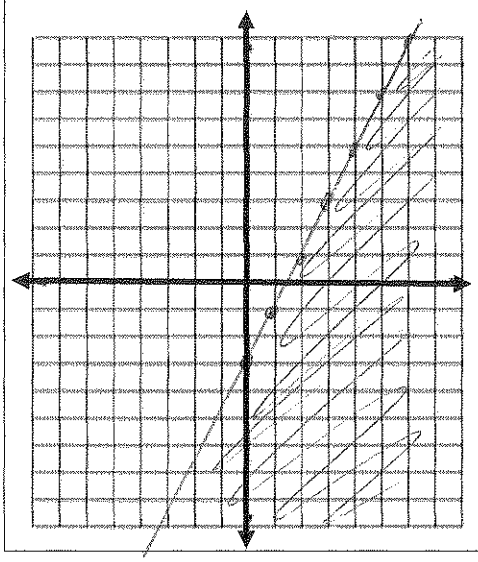
4. $-2n - 2(3n + 2) \geq -4(1 + 7n)$

$n \geq 0$



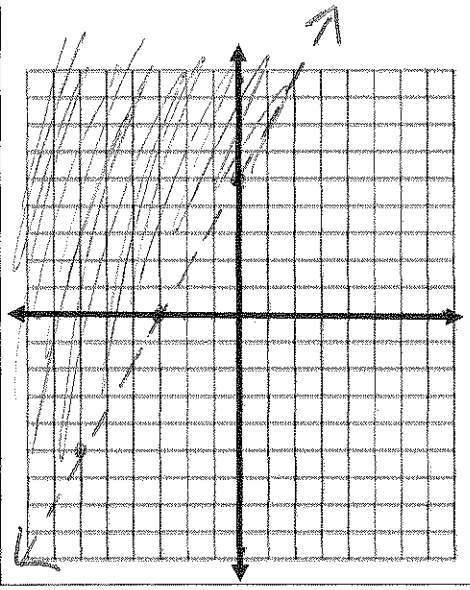
Graph and shade the solution set of the following inequalities.

1. $y \leq 2x - 3$



2. $5x - 3y < -15$

$y > \frac{5}{3}x + 5$



Targets	Ch 7 Learning Targets	Ch 7 Problems
T 7-1	I can multiply monomials using the properties of exponents and simplify expressions.	7.1 pg. 394 #7-19all
T 7-2	I can divide monomials using the properties of exponents and simplify expressions.	7.2 pg. 402 #1-9, 11
T 7-3	I can use all properties of exponents to solve exponents.	7.2 pg. 402 #19-41o, 53, 56

1. $(2gh^4)^3((-2g^4h)^3)^2 =$ $512g^{27}h^{18}$	2. $3(7d^2)^4 =$ $720d^8$
3. $\frac{8a^5b^8}{40a^7b^3} =$ $\frac{b^5}{5a^2}$	4. $\frac{-8x^{12}y^3}{10y^{10}x^6} =$ $\frac{-4x^6}{5y^7}$
5. $\left(\frac{2x^{-4}}{3y^3}\right)^4 =$ $\frac{16}{81x^{16}y^{16}}$	6. $\left(\frac{7x^3y^5}{6x^{-9}y^{-3}}\right)^{-2} =$ $\frac{36}{49x^{24}y^{16}}$

Ch. 8 Problems

Targets	Ch 8 Learning Targets	Ch 8 Problems
T 8-1	I can perform addition and subtraction on polynomials.	Pg 468 #11-17o, 57
T 8-2	I can multiply polynomials using the distributive & double distributive method or FOIL.	Pg 483 #13-29o Pg 489 #31-37o
T 8-6	I can use factoring and the zero product property to solve quadratic equations.	Factoring to Solve WS#4

Simplify 1. $(5a^2 + 6a + 2) - (7a^2 - 7a + 5)$ $-2a^2 + 13a - 3$	Simplify 2. $6t(2t - 3) - 5(2t^2 + 9t - 3)$ $2t^2 - 63t + 15$

Multiply 3. $(4h-2)(4h-1)$ $16h^2-12h+2$	Multiply 4. $(w+4)(w^2+3w-6)$ $w^3+7w^2+6w-24$
Factor 5. $7x+49$ $7(x+7)$	Factor 6. $8m-6$ $2(4m-3)$
Factor 7. $t^2-15t+56$ $(t-7)(t-8)$	Factor 8. $-12-9m+3m^2$ $(3m+3)(m-4)$
Solve 9. $h^2+2h=35$ $h=-7 \quad h=5$	Solve 10. $a^2+14a=-45$ $a=-9 \quad a=-5$
Solve 11. $3h^2+2h-16=0$ $h=-\frac{8}{3} \quad h=2$	Solve 12. $15n^2-n=2$ $n=\frac{2}{5} \quad n=-\frac{1}{3}$