Paint Branch High School

Honors Algebra 2 Summer Review 2009

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Name_____

Show all work in the space provided. Circle the final answer. **Due Monday, August 31**.

Solve for x:

1) $-4(3-x)=8$	2) $3x-2(x+1)=0$

Solve the system of equations:

3) $-2x+y=8$

$y=-3x-2$

Factor each of the following polynomials:

4) x^2-x-72	5) $10m^3n^2-15m^2n$
6) $x^2+12x+36$	7) x^2-64
8) $a^2-10a+24$	9) $3x^2+18x+27$

Solve the following quadratic equations:

10) $(x+1)(x+3)=0$	11) $p^2+6p=0$

Simplify each of the following:

12) $(-3x^2+4x-7)+(2x^2-7x+8)$	13) $(-4a^3+2a^2-a-7)-(3a^3-2a^2-a+8)$
14) $(x+7)(x+5)$	15) $-3xy^3(x-2y)$
16) $(15a^4b^2c)^0$	17) $(8a^3b^2)(2a^{-4}b^5)$
18) $\dfrac{(3x^2y)^3}{6x^{-2}y^5}$	19) $(x+6)^2$

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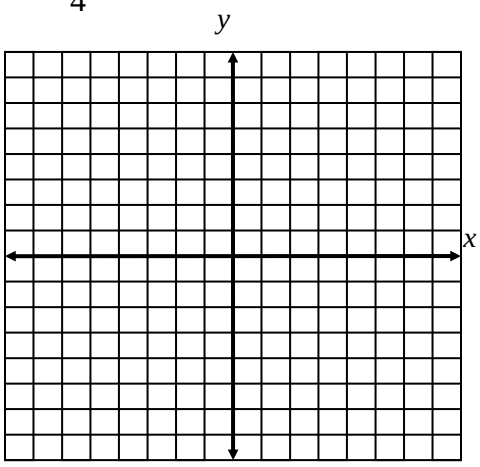
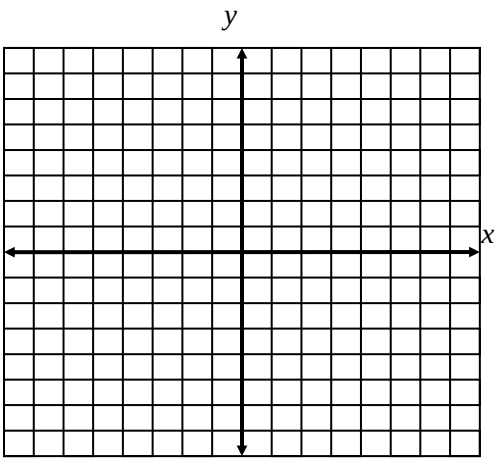
Graph each of the following **without using a calculator.**

20) $y = -\frac{3}{4}x + 4$



21) $y = -3x$



Given the following matrices, $A = \begin{bmatrix} 6 & -3 \\ 2 & 1 \end{bmatrix}$ $B = \begin{bmatrix} 5 & 6 \\ 2 & -1 \end{bmatrix}$ $C = \begin{bmatrix} 0 & 5 \end{bmatrix}$, determine:

22) A + B	23) A - B	24) -2C

Answer the following questions concerning **linear** equations

25) Determine the slope of the line containing the points (6,-2) and (-1,5).	26) Determine an equation for a line with slope $\frac{1}{2}$ and y-intercept at (0, -3).

Perform the given operations with fractions. Do not use a calculator. Show all work and simplify your final answer.

27) $\frac{1}{2}+\frac{1}{4}$	28) $2\left(\frac{3}{4}\right)$	29) $\frac{3}{4}-\frac{5}{7}$
30) $\frac{17}{5}+\frac{2}{10}$	31) $\frac{1}{x}+\frac{5}{x}$	32) $\frac{5}{2}\cdot\frac{1}{4}$
33) $\frac{2}{3}\div 8$	34) $\sqrt{\frac{9}{16}}+5$	35) $\left(\frac{5}{6}+\frac{2}{10}\right)-2\left(\frac{1}{4}\right)$

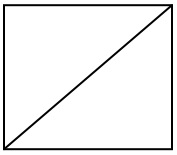
Standard Form: **A*x* + B*y* = C** where A and B are not both zero	Slope-Intercept Form: ***y* =*mx*+*b*** where m = slope and b = y-intercept	Let $(x_1, y_1)$and (x_2, y_2) be two points in the plane. **slope** = $\frac{y_2 - y_1}{x_2 - x_1}$

36) Solve the system of equations:

$-x+3y=0$

$2x+6y=12$

37) Find the area of a square whose diagonal is equal to 4x.



38) Is (0,-5) a solution to the following system of inequalities?

$6+3y<4(3-x)$

39) A car salesman's weekly salary is a base amount plus an additional amount for each car sold. The table below shows a person's weekly salary earned for the last three weeks.

Cars sold (c)	Weekly Salary (S)
4	$500
9	$1000
12	$1300

What is the person's weekly salary when 13 cars are sold? Justify your answer.

40) Sketch a graph of $f(x)=x^2-x-2$. Then complete the characteristics below.

Domain:
Range:
Axis of Symmetry:
Increases:
Decreases
x-intercepts:
y-intercept:
Minimum Value:
Maximum Value:
Continuous: