Geometry
Algebra Review Sem 2 Week 10

Name Key-2015 Per
Semester 2

Solve and graph solutions on the number line.

1. $3 - 2(2y + 3) > 9$

$3 - 4y - 6 > 9$
$-4y - 3 > 9$
$+3 \quad +3$
$\frac{-4y}{-4} > \frac{12}{-4}$
$y < -3$

-4 -3 -2 -1 0 1 2

Graph

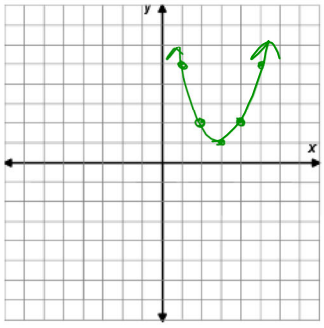
2. In STANDARD form, write the equation of the line passing through the points (-3, 2) and (3, -5).

$m = \frac{-5-2}{3-(-3)} = \frac{-7}{6}$

$y - 2 = -\frac{7}{6}(x+3)$
$6(y-2 = -\frac{7}{6}x - \frac{21}{6})$
$6y - 12 = -7x - 21$
$+7x \quad +12 \quad +7x + 12$
$7x + 6y = -9$

3. $y = (x-3)^2 + 1$

x	y
0	10
1	5
2	2
3	1
4	2
5	5



work

$y = (0-3)^2 + 1 = (-3)^2 + 1 = 9 + 1 = 10$
$y = (1-3)^2 + 1 = (-2)^2 + 1 = 4 + 1 = 5$
$y = (2-3)^2 + 1 = (-1)^2 + 1 = 1 + 1 = 2$
$y = (3-3)^2 + 1 = 0^2 + 1 = 1$
$y = (4-3)^2 + 1 = 1^2 + 1 = 2$
$y = (5-3)^2 + 1 = 2^2 + 1 = 5$

4. Simplify $\frac{4x^2+2x}{x^2+x-2} \div \frac{2x^2-2x}{2x+1}$

$\frac{2x(2x+1)}{(x+2)(x-1)} \cdot \frac{2x+1}{2x(x-1)}$
$= \frac{(2x+1)^2}{(x+2)(x-1)^2}$

5. Solve the system of equations.

$y = 4 - 2x$
$3x - 2y = -6$

$3x - 2(4-2x) = -6$
$3x - 8 + 4x = -6$
$7x - 8 = -6$
$+8 \quad +8$
$7x = 2$
$x = 2/7$

$y = 4 - 2(\frac{2}{7})$
$= 4 - \frac{4}{7}$
$= \frac{28}{7} - \frac{4}{7} = 24/7$

$(2/7, 24/7)$

6. Find the solutions to the equation.

$3x^2 = 7 - 16x$

$3x^2 + 16x - 7 = 0$
$x = \frac{-16 \pm \sqrt{(16)^2 - 4(3)(-7)}}{2(3)}$
$= \frac{-16 \pm \sqrt{340}}{6}$

$\frac{-16 + \sqrt{340}}{6} \approx 0.41$

$\frac{-16 - \sqrt{340}}{6} \approx -5.7$

$x = \{0.41, -5.7\}$