Math 1030, Quiz #1, Summer 2014 Name KEY

Instructions: Show all work. Use exact answers unless specifically asked to round. Reduce as much as possible. Be sure to answer all parts of each question.

1. Simplify $\left(\frac{3\cdot(-2)^2+5}{7^2-8\div(-4)}\right)^2$ $= \left(\frac{3\cdot4+5}{49-(-2)}\right)^2 = \left(\frac{12+5}{49+2}\right)^2 = \left(\frac{17}{51}\right)^2 = \left(\frac{1}{3}\right)^2$

$= \boxed{\frac{1}{9}}$

2. Solve the equations for the variable. State whether the equation is conditional, an identity or a contradiction, and clearly state the solution (if any) or say that there is no solution.

a. $3x-(2x-7)+5=-5x+3(2x+4)-1$

$3x-2x+7+5 = -5x+6x+12-1$

$x+12 = x+11$

$12 = 11$

This is a contradiction

x has no solution

b. $\left(\frac{4}{3}x+\frac{x-2}{2}=\frac{x-1}{6}\right)6$

$2\frac{6\cdot4}{3}x+\overset{3}{\cancel{6}}\frac{\cancel{6}}{\cancel{2}}(x-2)=\frac{6}{6}(x-1)$

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

$8x+3x-6=x-1$ Conditional

$11x-6=x-1$

$+6 \quad +6$

$\frac{10x}{10}=\frac{5}{10} \Rightarrow \boxed{x=\frac{1}{2}}$

3. Graph the equation $3x+2y=12$ on the graph on the right. Label any intercepts.

$x=0 \Rightarrow$ y-int $(0,6)$

$3(0)+2y=12$

$2y=12$

$y=6$

$y=0 \Rightarrow$ x-int $(4,0)$

$3x+2(0)=12$

$3x=12$

$x=4$