Math 201 quiz 1A

(1-1, 1-2)

Show your work! No calculators! No books and notes!

1. (4pts) Solve: \( \frac{x+1}{3} - \frac{x}{4} = \frac{1}{2} \)

\[
12 \left( \frac{x+1}{3} - \frac{x}{4} \right) = 12 \left( \frac{1}{2} \right) \quad \boxed{+2}
\]

\[
4(x+1) - 3x = 6
\]

\[
4x + 4 - 3x = 6
\]

\[
\boxed{x + 4 = 6}
\]

\[
\boxed{x = 2} \quad \boxed{+1}
\]

2. (5pts) Solve and write the answer in interval notation: \(-8 \leq 5 - 2x < 7\)

\[
-5 \quad -5 \quad -5 \quad \boxed{1}
\]

\[
-13 \leq 2x < 2
\]

\[
-\frac{13}{2} \quad \frac{1}{2} \quad \boxed{1}
\]

\[
-1 < x \leq \frac{13}{2} \quad \boxed{2}
\]

\[
(-1, \frac{13}{2}] \quad \boxed{1}
\]

3. (2pts) Write an equation of a vertical line passing through the point \((-9, 5.5)\).

\[
\boxed{x = -9} \quad \boxed{2}
\]

Wrong sign: \( \boxed{-1} \)

\( \boxed{x = 5.5} \) or \( y = -9 \): \( \boxed{0} \)
4. (5pts) Find an equation for the line that passes through (2, -3) and (4, 3). Write the resulting equation in slope-intercept form and graph the line.

\[ m = \frac{3 - (-3)}{4 - 2} = \frac{6}{2} = 3 \]

\[ y - 3 = 3(x - 4) \]

\[ y - 3 = 3x - 12 \]

\[ y = 3x - 9 \]

5. (2pts) Find the slope of the line represented by the equation \(3x - 2y = 6\)

\[-2y = -3x + 6\]

\[ y = \frac{3}{2}x - 3 \]

\[ m = \frac{3}{2} \]

6. (2pts) What is the slope of the line represented by \(y = 5\)? Graph the line.

\[ m = 0 \]