MAC 1147 - Quiz 3 **Name:**

For full credit, you must show all work and circle your final answer.

1 Sove the inequality and write the interval x lies in:
$3x - 6 \geq 4 - 2x$

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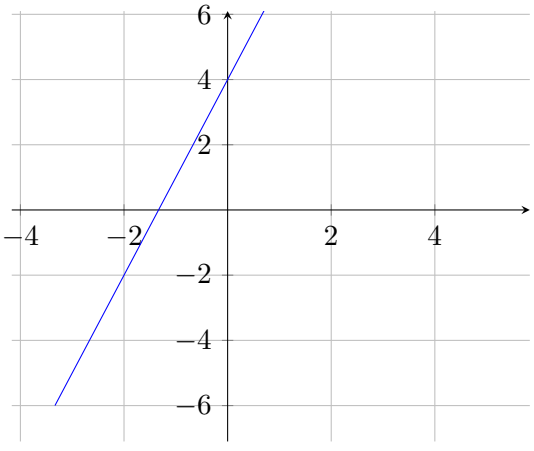
Add 6 to both sides $\rightarrow 3x \geq 10 - 2x$
Add $2x$ to both sides $\rightarrow 5x \geq 10$
Divide by 5 on both sides $\rightarrow x \geq 2$

As a general note, you only flip the inequality sign when you divide or multiply by a negative number. Think about it this way, if $2 < 3$ then its not true that $-2 < -3$, but it is true that $-2 > -3$.

2 Plot the points given, and find the distance between them:
$(-3, -2)$ and $(2, 3)$
Graph is excluded from this key.
The distance formula is $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
$d = \sqrt{(2 - (-3))^2 + (3 - (-2))^2}$
$d = \sqrt{(5)^2 + (5)^2}$
$d = \sqrt{2 * 25}$
$d = 5\sqrt{2}$

3 Find the x-intercept and y-intercept of the equation, and then sketch the associated graph:
$y = 3x + 4$



$f(0) = 3(0) + 4 = 4$ so the y-intercept is (0,4).
If $y = 0$, then $0 = 3x + 4$, so the x-intercept is $(\frac{-4}{3}, 0)$.