

In-Class Problems 4 for Wednesday, January 31

These problems are from [Pre-Class Problems 4](#).

1. A motorboat travels 72 miles with a current of 3 mph. The return trip against the current takes 2 hours longer. Find the average rate of the motorboat in still water.

2. Solve the following equations.

a.  $3|6x - 11| - 8 = 13$

b.  $|9 - 4t| = |t + 3|$

3. Solve  $\sqrt{3x + 16} + \sqrt{x + 13} = 5$

4. Solve the following inequalities. Graph the solution set. Write the solution set in interval notation.

a.  $8x + 9 < -15$

b.  $\frac{y + 4}{4} - \frac{3y - 8}{6} \leq -\frac{7}{3}$

5. Solve the following inequalities. Graph the solution set. Write the solution set in interval notation.

a.  $-3 < 5 - 4t \leq 25$

b.  $5 \leq \frac{6w + 11}{3} < 7$

6. Solve the following inequalities. Graph the solution set. Write the solution set in interval notation.

a.  $|2x - 7| < 15$

b.  $6|3y + 8| - 7 \geq 23$