

Math 110 Review Answers

Here are answers to some of the review problems (note that some are incomplete).

Note: Don't assume these answers are 100% correct.

Linear equations and inequalities, one variable:

1. Solve each equation.

(a) Solution set: \mathbb{R}

(c) Solution set: $\left\{\frac{5}{18}\right\}$

(b) Solution set: \emptyset

(d) Solution set: $\left\{-\frac{28}{5}\right\}$

2. Solve for x .

(a) $x = \frac{2}{2w - 1}$

(b) $x = \frac{5 - c}{5}$ or $x = 1 - \frac{c}{5}$

3. Solve each inequality. Give the solution set both graphically and using interval notation.

(a) Solution set: $(-\infty, \frac{11}{2})$

(d) Solution set: $\left[-\frac{17}{2}, \frac{13}{2}\right)$

(b) Solution set: $[48, \infty)$

(e) Solution set: \emptyset

(c) Solution set: $(-\infty, \infty)$

(f) Solution set: $(-\infty, 1) \cup (10, \infty)$

Word Problems: Solve each word problem. You may use either one variable and one equation, or two variables and two equations to set up the problem.

(a) 15 pounds

(b) 2 meters and 1.5 meters

(c) 17.5 and -12.5

(d) 15 miles

Linear equations in two variables

4. Write the equation of each line in (i) slope-intercept form and (ii) standard form with integral coefficients.

(a) $7x - 3y = 21$

(d) $x + y = 3$

(b) $2x + 3y = 0$

(e) $x = 2$

(c) $x - 3y = 9$

(f) $4x + 7y = 30$

5. Graph each equation.

(a) $5x - 3y = 7$

(c) $7x = 21$

(b) $y - 3 = 10$

(d) $4x + 5y = 10$

6. Graph the solution set to each linear inequality.

(a) $y > 3x - 2$

(d) $3y > 9$ and $y - x \leq 5$

(b) $y \leq 2x + 3$

(e) $3x + 2y \geq 8$ or $3x - 2y < 6$

(c) $-5x > 3$

(f) $1 \leq x < 3$ and $2 < y \leq 5$