ACMAT117 Fall 2025
Professor Manguba-Glover
Homework 5 Name: _____

Show all work and simplify all answers before circling/boxing them. If you do the problem incorrectly, or don't show sufficient work, you will be asked to rewrite the problem for full credit.

**Due next class.** Students who turn assignments in late (or do not attempt a problem) forfeit their ability to rewrite those problems for credit.

(1) Find an equation (of any form) of the line that is perpendicular to $y = 6x - 10$ and passes through $(15, -7)$

(2) Find an equation (of any form) of the line that is parallel to $-3x + 4y = 12$ and passes through $(-4, -6)$

(3) Determine if the equation is a contradiction, identity, or a conditional equation:

$$7 - 9z = 2(3 - 4z) - z$$

(4) Determine if the equation is a contradiction, identity, or a conditional equation:

$$\frac{1}{2}x - 2(x - 1) = -\frac{3}{2}x + 2$$

(5) Determine if the equation is a contradiction, identity, or a conditional equation:

$$\frac{t + 1}{2} = \frac{3t - 2}{6}$$

(6) Solve the equation: $-5(3 - 2x) - (1 - x) = 4(x - 3)$

(7) Solve the equation: $\frac{3x-1}{5} - 2 = \frac{2-x}{3}$

(8) Solve the inequality. Write your answer in **interval notation**: $-2x < -(x + 1)$

(9) Solve the inequality. Write your answer in **interval notation**: $3(x + 5) \leq 0$

(10) Solve the inequality. Write your answer in **interval notation**: $-\frac{3}{4} < \frac{2-t}{5} \leq \frac{3}{4}$