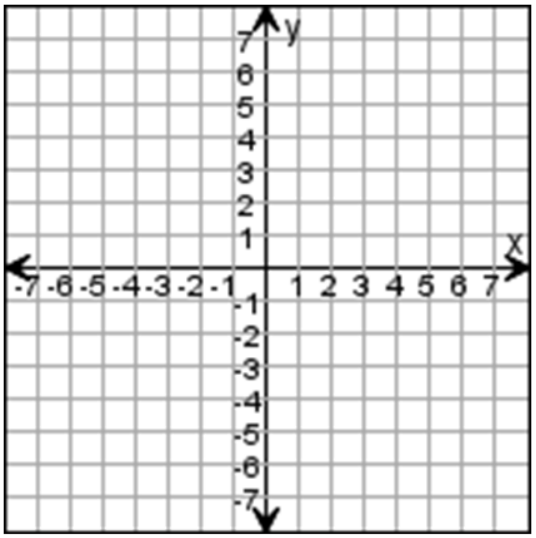
**M&L Test 2: Algebra Applications** **Name :**

**For item 1, solve the system of equations graphically. List three points on each line. Graph the two lines. Give the solution of the system of equations as an ordered pair.**

**1.** $y = 2x - 6$ $y = -x + 6$

| x | y |
|---|---|
| | |
| | |
| | |

| x | y |
|---|---|
| | |
| | |
| | |




**For item 2, solve the system of equations algebraically. Document your algebraic process. Give the solution of the system of equations as an ordered pair.**

**2.** $y = -2x + 7$

$y = x - 5$

**For item 3, document your process to solve the inequality. Check your answer.**

**3.** $-8 > -2x + 6$

**For items 4-5, document your process to solve the problem. Check your answer.**

**4.** MJ is planning a 6-day spring break trip with a friend. MJ has saved $490 for the trip and earns $30 per driveway shoveling snow. The trip costs include $170 for gas, $450 for food and beverages, and $325 for motels. How many driveways must MJ shovel before spring break to have enough money for the trip? Document your process. Answer in the form of a sentence.

**5.** Kris charges $150 plus $25 per hour. Song charges $50 per hour. Suppose that a task takes *h* hours to complete. For what values of *h* does it cost less to hire Kris? Document your process. Answer using an inequality symbol.

**For items 6-7, evaluate the function as indicated. Document your process by showing your calculations.**

$$f(x) = \begin{cases} 4x + 25 & for \;\; x < -4 \\ 17 - 2x & for \;\; -4 \leq x \leq 2 \\ \sqrt{3x + 1} & for \;\; x > 2 \end{cases}$$

**6.** f(16)

**7.** f(0.8)

**For items 8-10, document your process by showing your calculations. Label your answer with the appropriate unit.**

**8.** A portable power source provides 54 W of power to operate an air compressor for inflating tires. This compressor draws 4.5 A of current when connected to the power supply. What is the voltage across the compressor in volts. Note: P = V * I

**9.** A computer has a power input of 230 W with 2 A of current in it. Calculate the resistance in ohms. Note: $P = I^2 * R$

**10.** A 4 Ω resistor, a 10 Ω resistor, and a 2 Ω resistor are connected in parallel. Find the total resistance in ohms. Round to one decimal place.