

Solving Inequalities: Classwork

You must answer the following on your POD paper. All answers will be whole numbers.

1. **Choose one of the levels below.** Solve the following inequalities and graph each solution.

Level 1:

- | | | |
|--------------------------------|-----------------------------|----------------------------|
| a. $-3x + 8 < 14$ | b. $\frac{x}{4} - 5 \leq 6$ | c. $-9x - 4 > -67$ |
| d. $\frac{x}{-7} + 11 \geq 15$ | e. $\frac{x - 7}{5} \leq 6$ | f. $\frac{x - 12}{-6} > 5$ |
| g. $\frac{x + 9}{-3} > 4$ | h. $2(n + 7) \geq -8$ | i. $-4(n + 3) < 32$ |

Level 2:

- | | | |
|---------------------------------|------------------------------|------------------------------|
| a. $-4 - 5x < -29$ | b. $-6 \geq \frac{w}{2} - 4$ | c. $-19 + 7h > -47$ |
| d. $-17 \leq -8 + \frac{v}{-6}$ | e. $\frac{-3 + m}{-8} > 1$ | f. $\frac{c + 11}{9} \geq 7$ |
| g. $-8(n + 7) > -48$ | | |

2. **Multiple Choice.** Which inequality represents the situation? Explain your choice.

In 4 more years, my dog will be over 11 years old. Let y = my dog's current age in years.

- A.** $y + 4 < 11$ **B.** $y + 4 > 11$ **C.** $y + 4 \geq 11$

3. **Multiple Choice.** Which inequality represents the situation? Explain your choice.

If I buy a DVD for \$19, I won't have enough money left to buy another.

Let m = the amount of money I have.

- A.** $m - 19 \leq 19$ **B.** $m - 19 \geq 19$ **C.** $m - 19 < 19$

4. Solve the following inequalities and graph each solution.

- | | | |
|----------------------------------|--|----------------------------|
| a. $-5(x + 4) \leq 35$ | b. $-32 \geq -4(x + 3)$ | c. $4x + 9 > 2x + 21$ |
| d. $-(2 + 5m) - 2 > 26$ | e. $-8 > -8(1 + 6r)$ | f. $4a + 17 < 8a - 7$ |
| g. $5t - 7(t + 1) > -9$ | h. $-p + 6p \leq 4 + 6p$ | i. $-4y - 16 \geq 8y + 44$ |
| j. $7 - 7(k - 7) > -4 + 5k$ | k. $-3(2u - 5) \leq -13 + u$ | |
| l. $-24 > 6(5b - 2) - 8(8b - 7)$ | m. $7(1 - 5f) - (f + 3) \geq 4$ | |
| n. $5d + 7(-6 - d) > 4(d + 3)$ | o. $x - 8 + 3x + 2 < -6(8x - 7) + 4(8x - 2)$ | |

Solving Inequalities: Homework

5. Write an inequality to describe the interval referred to in each statement, then graph the inequality on a number line.

a. To get a C, you must earn a percentage in the 70's.
Let x represent the percentage for a C.

b. You go shopping with only \$20 in your pocket.
Let x represent how much money you can spend.

c. You are considered a minor if you are under the age of 21.
Let x represent the age of a minor.

6. Solve the following inequalities and graph each solution. All answers will be whole numbers

a. $-8x + 58 > 2$

b. $\frac{x}{-5} + 17 \geq 32$

c. $4x - 6 > -30$

d. $\frac{x + 11}{-8} \leq 5$

e. $\frac{x - 15}{4} < -6$

f. $8(n + 7) > -48$