Objective: TSWBAT Solve Multi Step Inequalities

Ex 1 $6m - 4 > 14$

$+4 \quad +4$

$\frac{6m}{6} > \frac{18}{6}$

$m > 3$

Use opposite operations to undo the subtraction and multiplication

② $-2x - 3 > -7$

$+3 \quad +3$

$\frac{-2x}{-2} > \frac{-4}{-2}$

$x < 2$

Remember to reverse the inequality when you divide by a negative value

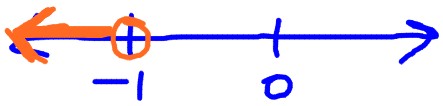
③ $-9 > 8k - 1$

$+1 \qquad +1$

$-8 > 8k$

$\frac{-8}{8} > \frac{8k}{8}$

$-1 > k$



You do not reverse the inequality symbol because you divided by a positive value

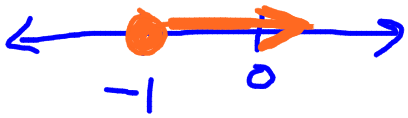
④ $-3x + 7 \leq 10$

$-7 \qquad -7$

$-3x \leq 3$

$\frac{-3x}{-3} \leq \frac{3}{-3}$

$x \geq -1$



Reverse the inequality symbol. You divided by -3

Solve and graph the solution

⑤ $8z-6 < 3z+12$

$-3z \quad -3z$

$5z-6 < 12$

$+6 \quad +6$

$\frac{5z}{5} < \frac{18}{5}$

$z < 3.6$

⑥ $3(x-4) > 4x+7$

$3x-12 > 4x+7$

$-3x \quad -3x$

$-12 > x+7$

$-7 \quad -7$

$-19 > x$

⑦ $-\frac{1}{3}p < \frac{1}{2}p - 6$ (6) (6) (6)

$-2p < 3p-36$

$+2p \quad +2p$

$0 < 5p-36$

$+36 \quad +36$

$\frac{36}{5} < \frac{5p}{5}$

$7.2 < p$

⑧ $3(3c+2) \leq 2(3c-2)$

$9c+6 \leq 6c-4$

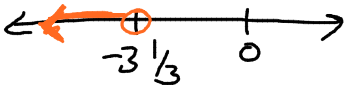
$-6c \quad -6c$

$3c+6 \leq -4$

$-6 \quad -6$

$\frac{3c}{3} \leq \frac{-10}{3}$

$c \leq -3\frac{1}{3}$



Special Solutions

(9) $10 - 8a \geq 2(5 - 4a)$

$10 - 8a \geq 10 - 8a$

$+8a \quad +8a$

$10 \geq 10$ ← All real Numbers are solutions

(10) $6m - 5 > 7m + 7 - m$

$6m - 5 > 6m + 7$

$-6m \quad -6m$

$-5 > 7$ ← No Solutions

Whats the Error ?

$$-3w - 4 < 5$$
$$-3w < 9$$
$$w < -3$$

ans. Reverse Inequality Symbol

Whats the Error ?

$$2r+5 \geq 11$$
$$2r \geq 16$$
$$r \geq 8$$

ans. added 5 instead of subtracting 5

Describe how the process of solving $-3v-9=12$ is different from solving $-3v-9<12$

*ans. the inequality symbol must be reversed when you divide by (-3)

You have $50 to spend on CDs that cost $7 each and one CD player that costs $29. At most how many CDs can you buy?

Write and Solve a two step inequality to find the solution.

ans. $7c + 29 \leq 50$

$-29 \quad -29$

$\frac{7c}{7} \leq \frac{21}{7}$

$c \leq 3$