6.5: Solving Linear Inequalities by Using Multiplication and Division - Worksheet

1. Do not solve each inequality. Determine which of the given numbers are solutions of the inequality.

a) $3t < -5$

−3 −1 1

b) $5 - 3d \geq 2 - d$

−5 0 5

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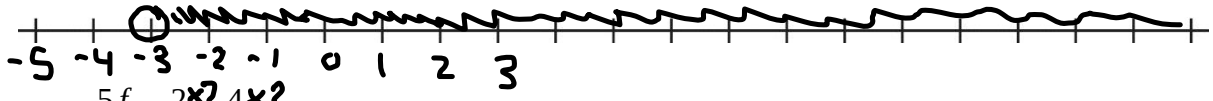
2. Solve each inequality and graph the solution.

a) $-3.5a < -1.3a + 6.6$

+1.3a +1.3a

$\frac{-2.2a}{-2.2} < \frac{6.6}{-2.2}$

$a > -3$



b) $-\frac{5f}{6} - \frac{2}{3} > \frac{4}{3}$ ×2 ×2 ×2

$\frac{-5f}{6} - \frac{4}{6} > \frac{8}{6}$

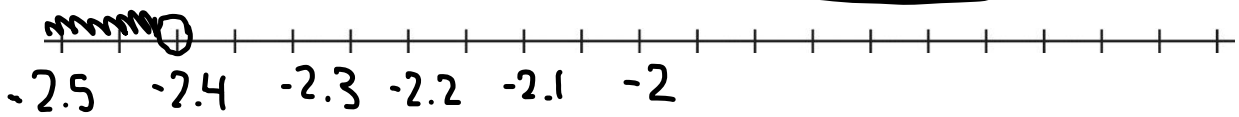
$-5f - 4 > 8$

$-5f - 4 > 8$

+4 +4

$\frac{-5f}{-5} > \frac{12}{-5}$

$f < \frac{12}{-5} = -2.4$



c) $1.3 - 2.5x \le -1.1x - 0.52$

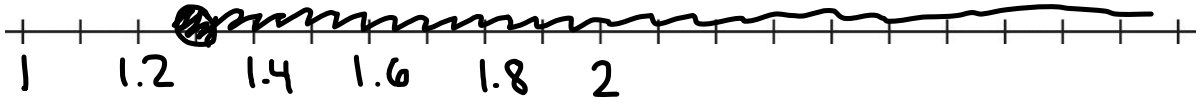
$+1.1x \quad +1.1x$

$1.3 - 1.4x \le -0.52$

$-1.3 \qquad -1.3$

$\frac{-1.4x}{-1.4} \le \frac{-1.82}{-1.4}$

$x \ge 1.3$



d) $-3(n - 2.5) \le 4(3.5 - n)$

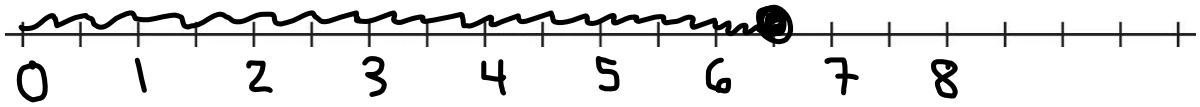
$-3n + 7.5 \le 14 - 4n$

$+4n \qquad +4n$

$n + 7.5 \le 14$

$-7.5 \quad -7.5$

$n \le 6.5$



3. Nadia gets paid $1000 per month plus 5% commission on her sales. She wants to earn at least $2200 this month. Write an inequality to represent this situation, then solve it to determine how much Nadia must sell to reach her goal.

$1000 + 0.05x \ge 2200$

$-1000 \qquad -1000$

$\frac{0.05x}{0.05} \ge \frac{1200}{0.05}$

$x \ge 24000$

Nadia must sell at least $24 000 worth of sales