Solving Single-Step Inequalities with Fractions and Mixed numbers:

Work with fractions, not decimals.

Solve and graph:

(1) $\frac{2}{3}n > 3\frac{1}{2}$

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

(3) $5\frac{1}{4} + x > 2\frac{1}{2}$

Work with fractions, not decimals.

Solve and verify:

(1) $-\frac{1}{3}n < 2\frac{3}{4}$

(2) $x - \frac{2}{5} \geq \frac{1}{5}$

(3) $-3\frac{3}{4} > 2x$

Solving Single-Step Inequalities with Fractions and Mixed numbers:

Work with fractions, not decimals. **AND**

Solve and graph:

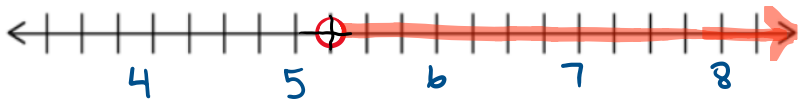
(1) $\frac{2}{3}n > 3\frac{1}{2}$

$\frac{2}{3}n > \frac{7}{2} \div \frac{2}{3}$

$\frac{2}{3}$

$n > \frac{7}{2} \times \frac{3}{2}$

$n > \frac{21}{4} = 5\frac{1}{4}$

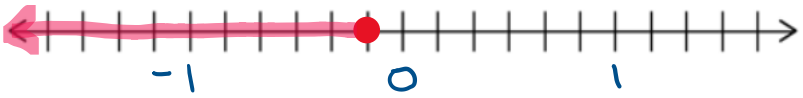


(2) $-2x \geq \frac{1}{3} \div -2$

-2

$x \leq \frac{1}{3} \times (-\frac{1}{2})$

$x \leq -\frac{1}{6}$



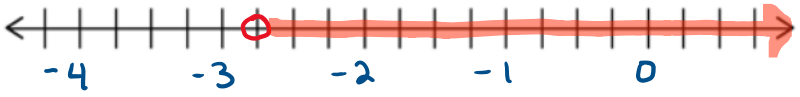
(3) $5\frac{1}{4} + x > 2\frac{1}{2}$

$\frac{21}{4} + x > \frac{5}{2}$

$-\frac{21}{4}$ $-\frac{21}{4}$

$x > \frac{10}{4} - \frac{21}{4}$

$x > -\frac{11}{4} = -2\frac{3}{4}$



Work with fractions, not decimals.

Solve and verify:

(1) $-\frac{1}{3}n < 2\frac{3}{4}$

$-\frac{1}{3}n < \frac{11}{4} \div (-\frac{1}{3})$

$n > \frac{11}{4} \times (-\frac{3}{1})$

$n > -\frac{33}{4} = -8\frac{1}{4}$

Verify the boundary:

$-\frac{1}{3}(-\frac{33}{4}) = 2\frac{3}{4}$

$\frac{33}{12} = 2\frac{3}{4}$

$2\frac{9}{12} = 2\frac{3}{4}$

$2\frac{3}{4} = 2\frac{3}{4}$

✓

Verify the inequality:

choose $x = 0$

$-\frac{1}{3}(0) < 2\frac{3}{4}$

$0 < 2\frac{3}{4}$

✓

(2) $x - \frac{2}{5} \geq \frac{1}{5}$

$+\frac{2}{5} \quad +\frac{2}{5}$

$x \geq \frac{3}{5}$

Verify the boundary:

$\frac{3}{5} - \frac{2}{5} = \frac{1}{5}$

$\frac{1}{5} = \frac{1}{5}$

✓

Verify the inequality:

choose $x = 1$

$1 - \frac{2}{5} \geq \frac{1}{5}$

$\frac{5}{5} - \frac{2}{5} \geq \frac{1}{5}$

$\frac{3}{5} \geq \frac{1}{5}$

✓

(3) $-3\frac{3}{4} > 2x$

$\div 2 \quad \div 2$

$-\frac{15}{4} > \frac{2x}{2}$

$-\frac{15}{4} \times \frac{1}{2} > x$

$-1\frac{7}{8} = -\frac{15}{8} > x$

Verify the boundary:

$-3\frac{3}{4} = 2(-\frac{15}{8})$

$-3\frac{3}{4} = -\frac{30}{8}$

$-3\frac{3}{4} = -3\frac{6}{8}$

$-3\frac{3}{4} = -3\frac{3}{4}$

✓

Verify the inequality:

choose $x = -5$

$-3\frac{3}{4} > 2(-5)$

$-3\frac{3}{4} > -10$

✓