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Solve Combined Inequalities

40) $-9 < 2x - 1 < 1$

$+1 \quad +1 \quad +1$

$\frac{-8}{2} < \frac{2x}{2} < \frac{2}{2}$

$-4 < x < 1$

48) $\frac{1}{3} \le \frac{x+1}{5} < \frac{5}{8}$ LCD = 120

$\frac{\cancel{120}^{40}}{1} \cdot \frac{1}{\cancel{3}_1} \le \frac{\cancel{120}^{24}}{1} \cdot \frac{x+1}{\cancel{5}_1} < \frac{\cancel{120}^{15}}{1} \cdot \frac{5}{\cancel{8}_1}$

$40 \le 24(x+1) < 75$

$40 \le 24x + 24 < 75$

$-24 \quad -24 \quad -24$

$\frac{16}{24} \le \frac{24x}{24} < \frac{51}{24}$

$\frac{16}{24} \le x < \frac{51}{24}$

$\boxed{\frac{2}{3} \le x < \frac{17}{8}}$

TI 84 Plus Calculator
To reduce a fraction

$\frac{16}{24}$ $\boxed{\text{enter}}$ .6666667

$\boxed{\text{math}}$ $\boxed{1}$ $\boxed{\text{enter}}$ $\frac{2}{3}$

01.12.2017 9:58a TR Coll. Alg. Sections 1.5 (End); 1.6 (All); 2.1 (All); and 2.2 (Sta
1/12 (Fri), 5:06 AM, 1 h 15 m 25 s

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TI 84 Plus Calculator
To reduce a fraction

$\frac{16}{24}$ [enter] .6666667

[math] [1] [enter] $\frac{2}{3}$

1.6 (15) $2 - |2x| = 1$

$-2 \quad -2$

$-|2x| = -1$

$\frac{-|2x|}{-1} = \frac{-1}{-1}$

$|2x| = 1$

$\frac{2x}{2} = \frac{1}{2}$ or $\frac{2x}{2} = \frac{-1}{2}$

$x = \frac{1}{2}$ or $x = -\frac{1}{2}$

(19) $\left|\frac{9x-5}{5x-4}\right| = 0$

$(5x-4)\frac{9x-5}{5x-4} = 0(5x-4)$

$9x - 5 = 0$

$+5 \quad +5$

$\frac{9x}{9} = \frac{5}{9}$

$\boxed{x = \frac{5}{9}}$

(14) $|4-7| = -\frac{1}{5}$

$\boxed{\text{NO Solution}}$

(30) $\frac{-|2x-3|}{-1} \geq \frac{-7}{-1}$

$|2x-3| \leq 7$

$-7 \leq 2x-3 \leq 7$

$+3 \quad +3 \quad +3$

$\frac{-4}{2} \leq \frac{2x}{2} \leq \frac{10}{2}$

$-2 \leq x \leq 5$

1.6.1 Solve the inequality

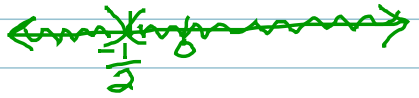
$|8x+4| > 0$

$8x+4 \neq 0$

$-4 \quad -4$

$\frac{8x}{8} \neq \frac{-4}{8}$

$x \neq -\frac{1}{2}$

graph 

Interval notation

$(-\infty, -\frac{1}{2}) \cup (-\frac{1}{2}, \infty)$

Set notation

$\{x \mid x \text{ is real}, x \neq -\frac{1}{2}\}$

(31) Solve and graph

$|8x| < -5$ Absolute value can never be less than a neg

No Solution

(27) Solve and graph

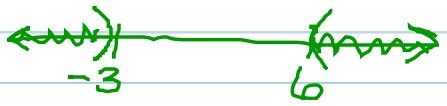
$|3-2x| > 9$

$3-2x > 9$ or $3-2x < -9$

$-3 \quad -3$ $-3 \quad -3$

$\frac{-2x}{-2} > \frac{6}{-2}$ $\frac{-2x}{-2} < \frac{-12}{-2}$

$x < -3$ or $x > 6$

graph 

2.1 Distance and midpoint

2.2 Symmetry

(27) symmetry with Y-axis

(46) given the point $(-9, -1)$, what would the other point be if the symmetry is with X-axis

$\boxed{(-9, 1)}$

Test for symmetry

(36) Test for X-axis symmetry

$x^2 + y - 144 = 0$ ← replace y with $-y$

$x^2 + (-y) - 144 = 0$

$x^2 - y - 144 = 0$ ← compace with original equation

No match No symmetry

$\boxed{\text{NO X-axis symmetry}}$