

Solve the equation $\frac{5x}{3} - \frac{4+x}{2} = \frac{x-2}{4} + 1$.

$$3 \times 2 \times 4 = 24$$

- A. $\frac{30}{11}$ ✓
- B. $\frac{11}{30}$
- C. $\frac{18}{11}$
- D. $\frac{11}{18}$

$$\frac{4}{\cancel{2} \times 3} \times \frac{5x}{\cancel{2}} - \frac{4+x}{\cancel{2} \times 2} = \frac{x-2}{\cancel{4} \times 1} + 1 \times \frac{12}{\cancel{4}}$$

$$4(5x) - 6(4+x) = 3(x-2) + 12$$

$$20x - 24 - 6x = 3x - 6 + 12$$

$$14x - 24 = 3x + 6$$

$$14x - 3x = 24 + 6$$

$$\frac{11x}{11} = \frac{30}{11}$$

$$x = \frac{30}{11}$$

Solve the inequality $2 \leq \frac{5-3x}{3} + 4 < 6$.

- A. $(-\frac{1}{5}, \frac{1}{3}]$
- B. $(\frac{1}{5}, \frac{11}{3}]$
- C. $(\frac{1}{3}, \frac{13}{2}]$
- D. $(-\frac{1}{3}, \frac{11}{3}]$ ✓

$$3 \times 2 \leq \frac{5-3x}{3} + 4 \times 3 < 6 \times 3$$

$$6 \leq 5 - 3x + 12 < 18$$

$$6 \leq 17 - 3x < 18$$

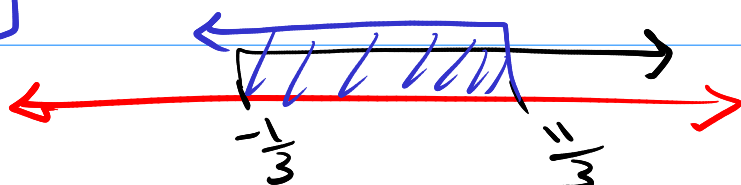
$$6 - 17 \leq -3x < 18 - 17$$

$$-11 \leq -3x < 1$$

$$\frac{11}{3} \geq x > -\frac{1}{3}$$

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$$x \in \left[-\frac{1}{3}, \frac{11}{3}\right]$$



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3. (15 points) Solve and graph on real number line the following compound inequality.

$$\frac{-3}{2} \leq \frac{1}{4} \left(\frac{1}{2}x - 1 \right) + \frac{3}{4} < \frac{3}{2}$$

$$\cancel{\frac{2}{4}} \times \frac{-3}{2} \leq \cancel{\frac{1}{4}} \left(\frac{1}{2}x - 1 \right) + \frac{3}{\cancel{4}} \times \cancel{\frac{2}{2}} < \frac{3}{2} \times \cancel{\frac{2}{2}}$$

$$-6 \leq \left(\frac{1}{2}x - 1 \right) + 3 < 6$$

$$-6 \leq \frac{1}{2}x - 1 + 3 < 6$$

$$-6 \leq \frac{1}{2}x + 2 < 6$$

$$-8 \leq \frac{1}{2}x < 4$$

$$x \in [-16, 8)$$

$$-16 \leq x < 8$$

graph



1. (10 points) Solve the formula $2r \times \frac{5t+7r}{3t+1}$ for (r) in terms of (t) .

$$\frac{2r}{1} \times \frac{5t+7r}{3t+1}$$

$$2r(3t+1) = 5t + 7r$$

$$2r(3t+1) - 7r = 5t$$

$$r[2(3t+1) - 7] = 5t$$

$$r = \frac{5t}{2(3t+1)-7}$$

$$r = \frac{5t}{6t+2-7} = \boxed{\frac{5t}{6t-5}}$$