

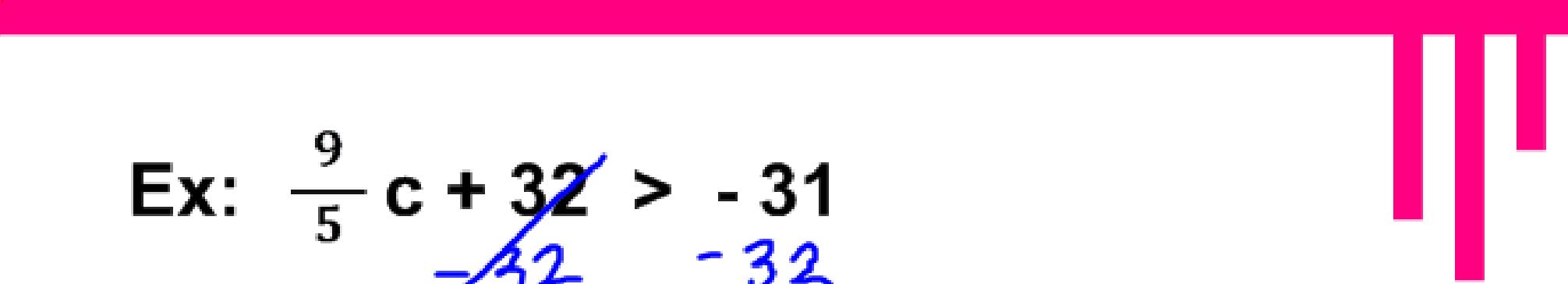
6 - 3

**Solving Multi-Step
Inequalities**

Ex: $-7b + 19 < -16$

$$\frac{-7b}{-7} < \frac{-35}{-7}$$

$$b > 5$$



Ex: $\frac{9}{5}c + 32 > -31$

~~$\frac{9}{5}c + 32$~~ $>$ ~~-31~~

$\quad \quad \quad -32 \quad \quad -32$

~~$\frac{9}{5}$~~ $\frac{9}{5}c > \frac{-63}{1} \cdot \frac{5}{9}$ $\frac{-315}{9}$

$c > -35$



Ex: Write an inequality, then solve.

"Three times a number minus eighteen is at least five times the number plus twenty-one."

$$\text{Ex: } 3d - 2(8d - 9) > 3 - (2d + 7)$$

$$\underline{3d - 16d} + 18 > \underline{3} - 2d - \underline{7}$$

$$\begin{array}{r} -13d + 18 \\ + 2d \end{array} > \begin{array}{r} -4 - 2d \\ + 2d \end{array}$$

$$\begin{array}{r} -11d + 18 \\ - 18 \end{array} > \begin{array}{r} -4 \\ - 18 \end{array}$$

$$\begin{array}{r} -11d \\ - 11 \end{array} > \begin{array}{r} -22 \\ - 11 \end{array}$$

$$\boxed{d < 2}$$

$$\text{Ex: } 8(x + 2) - 3(x - 4) < 5(x - 7) + 8$$

$$\underline{8x + 16} - \underline{3x + 12} < \underline{5x - 35} + 8$$

$$\cancel{5x} + 28 < \cancel{5x} - 27$$

$$28 < -27$$

no solution



Homework:

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