

$$32.) \quad \cancel{-1} \cdot \frac{3}{4} \leq \cancel{-1} \cdot \frac{5}{7} m$$

$$-\frac{21}{20} \geq m$$

$$m \leq -\frac{21}{20}$$

$$\textcircled{m \leq -\frac{1}{20}}$$



$$\begin{array}{c|c} D & U \\ \hline -(-\frac{5}{7}) & -(-\frac{1}{3}) \end{array}$$

$$36.) \quad \frac{5}{\cancel{10}_2} - \frac{\cancel{3}^1}{\cancel{4}_2} \geq \frac{\cancel{10}}{\cancel{4}} - \frac{\cancel{6}}{\cancel{10}} a$$

$$\frac{5}{4} \leq a$$

$$a \geq \frac{5}{4}$$

$$\begin{array}{c|c} D & U \\ \hline \cdot(-\frac{6}{10}) & \cdot(-\frac{10}{6}) \end{array}$$

24.)

$$\text{rate} = \frac{\text{distance}}{\text{time}}$$

$$15 \leq 3h$$

$$\frac{3h}{3} \geq \frac{15}{3}$$

$$h \geq 5 \text{ mph}$$

38.)

$$2007 < 2006$$

$$2007 < 2006 - 8200$$

$$\begin{array}{r} 806,300 < n - 8200 \\ + 8,200 \quad \quad + 8200 \end{array} \quad \begin{array}{r} D | U \\ -8200 \quad +8200 \end{array}$$

$$814,500 < n$$

$$n > 814,500$$

## 5-5 Multistep Inequalities

$$l = 3d$$

$$3(d+2) = 12$$

$$\begin{array}{r} 3d + \cancel{6} = 12 \\ \phantom{3d} + \cancel{6} \quad -6 \\ \hline \end{array}$$

$$\begin{array}{r} 3d = 6 \\ \div 3 \quad \div 3 \\ \hline d = 2 \end{array}$$

$$\begin{array}{r|l} D & U \\ \hline -3 & -6 \\ +6 & \div 3 \end{array}$$

$$4(x-3) > 6$$

$$4x - \cancel{12} > 6 + \cancel{12}$$

$$\frac{4}{4}x > \frac{18}{4}$$

$$x > 4\frac{1}{2}$$

D	U
•4	+12
-12	÷4

First Distribute  
(when you distribute  
you are done w/ the  
parenthesis.)

$$3 = 4(x+2)$$

$$\begin{array}{r} 3 = 4x + 8 \\ -8 \quad -8 \\ \hline -5 = 4x \\ \frac{-5}{4} = \frac{4x}{4} \\ -1.25 = x \end{array}$$

$$\begin{array}{r|l} D & U \\ \hline \cdot 4 & -8 \\ +8 & \div 4 \end{array}$$

$$\begin{aligned} 4(b-3) &\leq 72 \\ 4b - 12 &\leq 72 \\ \hline 4b &\leq \frac{84}{4} \\ b &\leq 21 \end{aligned}$$

$$\begin{array}{r|l} D & U \\ \cdot 4 & +12 \\ -12 & \div 4 \end{array}$$



$$4(x+5) = 3(2x+4)$$

Distribute

$$\cancel{4x} + 20 = \cancel{6x} + 12$$

Combine Like Terms

$$\begin{array}{r} 20 \\ -12 \\ \hline 8 \end{array} = \begin{array}{r} 2x \\ -12 \\ \hline 2x \end{array}$$

$$\frac{8}{2} = \frac{2x}{2}$$

$$4 = x$$

$$\frac{D/U}{2 \div 2}$$

$$12m + 12 = 6(3m + 3)$$

$$12m + 12 = 18m + 18$$

$$\begin{array}{r} 12m + 12 = 18m + 18 \\ -12 \quad -12 \\ \hline 12m = 18m + 6 \\ -18m \quad -18m \\ \hline -6m = 6 \end{array}$$

$$\begin{array}{r} -6m = 6 \\ \div -6 \quad \div -6 \\ \hline m = -1 \end{array}$$

$$\begin{array}{r} D/U \\ +12 \quad -12 \end{array}$$

$$5(n-3) = 3(n+1)$$

$$\begin{array}{r} 5n - 15 = 3n + 21 \\ +15 \qquad +15 \\ \hline \end{array}$$

$$\begin{array}{r} 5n = 3n + 36 \\ -3n \quad -3n \\ \hline \end{array}$$

$$\frac{2n}{2} = \frac{36}{2} \quad n = 18$$

$$\begin{array}{r} D/U \\ \hline 2 \div 2 \end{array}$$

$$5a - 8 \geq 4(a - 3) \quad \text{Distribute}$$

$$\begin{array}{r} 5a - 8 \geq 4a - 12 \\ -4a \quad -4a \end{array} \quad \text{Combine Like Terms}$$

$$\begin{array}{r} 1a - 8 \geq -12 \\ +8 \quad +8 \\ \hline 1a \geq -4 \end{array}$$

$$\begin{array}{r|l} D & U \\ \hline 1 & +8 \\ -8 & \div 1 \end{array}$$

$$\begin{aligned} -2(k+1) &< -16 + 5k \\ -2k - 2 &< -16 + 5k \\ \underline{-5k} & \\ -7k - 2 &< -16 \\ \underline{+2} & \\ -7k &< -14 \\ \underline{-7} & \\ k &> 2 \end{aligned}$$

$$3(y-5)$$

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