

HW review

p. 367 #39

l = length of a piece

w = width of a piece

$$l \leq 15w$$

$$\frac{16}{5} = \frac{48}{15} \leq \frac{15w}{15}$$

$$48 \text{ in} = l$$

$$w \geq \boxed{\frac{16}{5}''}$$

#36 p. 361

$$\begin{array}{r} 3 \text{ min.} \quad 41.1 \text{ sec} \\ 180 \text{ sec} \quad + \end{array}$$

221.1 sec

$$\begin{array}{r} \overset{1}{2} \overset{1}{2} \overset{0}{1} \overset{0}{1} \overset{1}{0} \\ - 167.18 \\ \hline 53.92 \end{array}$$

	1	1	1
1	53.34		
2	56.38		
3	57.46		
4	$\leq \boxed{53.92}$		

167.18

Fastest: 53.18

Av. : 53.92

Slowest: 61.02

inequalities:

$$6.1 \quad y + 7 \geq 12$$

$$6.2 \quad 3y < -6$$

$$\boxed{6.3} \quad 3y + 7 \leq 17 - 7$$

1. Add or subtract #'s to isolate variable

$$\begin{array}{r} 3y \leq 10 \\ \hline \end{array}$$

2. Multiply or divide by the coefficient of the variable

$$y \leq \frac{10}{3}$$

$$5x - 7 \leq 3(4x + 2)$$

1. Distribute

$$\begin{array}{rcl} 5x - 7 & \leq & 12x + -6 \\ -12x + 7 & & -12x + 7 \end{array}$$

2. Add/subtract

$$\frac{-7x}{-7} \leq \frac{1}{-7}$$

$$x \geq -\frac{1}{7}$$

3. Divide or multiply
* reverse the inequality if
* or \div by $-$ #!

$$17. 4m + 14 - 2m \leq 2(m + 7)$$

$$\begin{array}{r} 4m+14-2m \leq 2m+14 \\ 2m-14-2m \quad -2m-14 \\ 0 \leq 0 \quad \text{true for} \\ \quad \quad \quad \text{all } m \end{array}$$

$$19. 4(3 - 2x) > 2(6 - 4x)$$

$$\begin{array}{r} 12-8x > 12-8x \\ -12+8x \quad -12+8x \\ 0 > 0 \quad \text{no sol.} \end{array}$$

$$21. -4n + 11 < -4(n + 6)$$

$$\begin{array}{r} -4n+11 < -4n-24 \\ +4n+24 \quad +4n+24 \\ 35 < 0 \quad \text{no. sol.} \end{array}$$

$$23. 2m + 10 - 7m \leq 5(4 - m)$$

$$\begin{array}{r} -5m+10 \leq 20-5m \\ +5m-10 \quad -10+5m \\ 0 \leq 10 \quad \text{true for} \\ \quad \quad \quad \text{all } m \end{array}$$

$$18. -2(n - 3) \geq 1 - 2n + 5$$

$$20. 2(5 - a) > 4a + 13 - 6a$$

$$22. 3(5 - 6x) \leq 2(11 - 9x)$$

$$24. 6(1 - 2n) \leq 5 - 12n$$

$$\begin{array}{rcl} \mathbf{21.} & 6x + 2 \leq 5x + 2 \\ & -5x \quad -2 \quad -5x \quad -2 \\ & x \leq 0 \end{array}$$

$$\begin{array}{rcl} \mathbf{23.} & 2x - 8 + 3x \geq 5x - 4 \\ & 5x - 8 \geq 5x - 4 \\ & -5x + 8 \quad -5x + 8 \quad \text{no sol.} \\ & 0 \geq 4 \end{array}$$

$$\begin{array}{rcl} \mathbf{25.} & 9a - 6a + 1 \leq 1 + 3a \\ & 3a + 1 \leq 1 + 3a \\ & \text{true for all } a \end{array}$$

30. **Weaving** A weaver spends ~~\$420~~³⁰⁰ on supplies to make wall hangings and plans to sell the wall hangings for ~~\$80~~⁵⁰ each.

- a. Write an inequality that gives the possible numbers w of wall hangings the weaver needs to sell in order for the profit to be ~~positive~~^{negative}.

$$300 \geq 50w \quad 420 \leq 80w$$

$$-300 + 50w < 0$$

$$\boxed{-420 + 80w > 0}$$

$$\begin{array}{r} +420 \quad 80 \quad +420 \\ \hline 80 \end{array}$$

- b. What are the possible numbers of wall hangings the weaver needs to sell in order for the profit to be ~~positive~~^{negative}?

~~300~~ $-6 \leq w$

~~negative~~ $w \leq 5.25$

$$50w < +300$$

$$\boxed{w < 6}$$

$$w > \boxed{5.25}$$

$$\boxed{w \geq 6}$$

Homework:

p. 372 4-30 (even), 34, 37, 38