

Assignment #17

17 4.1 p 304 # 8, 14, 18, 42, 44, 46, 50

$$8. \quad \frac{x-1}{2} + 1 > x+1$$

$$x-1+2 > 2x+2$$

$$x+1 > 2x+2$$

$$-1 > x \text{ or } (-\infty, -1)$$

$$14. \quad 7x+4 \leq 2(x-1)$$

$$7x+4 \leq 2x-2$$

$$5x \leq -6$$

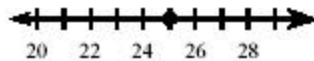
$$x \leq -\frac{6}{5}$$



$$18. \quad -\frac{2x}{5} \leq -10$$

$$x \geq -10 \left(-\frac{5}{2} \right)$$

$$x \geq 25$$



$$42. \quad \text{Let } x = \text{number of days.}$$

$$\text{Thrifty: } y_T = 33x$$

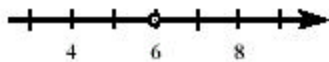
$$\text{Budget: } y_B = 20x + 78$$

$$20x + 78 < 33x$$

$$78 < 13x$$

$$6 < x$$

It would be cheaper to rent from Budget if you rent the car for more than 6 days.



$$44. \quad \text{Water Bill} \quad \text{Water Tax}$$

$$x \in (0, 60) \quad 0 < t = 0.02x < 0.02(60) = \$1.20$$

$$x \in [60, 80) \quad \$2.40 = 0.04(60) \leq t = 0.04x < 0.04(80) = \$3.20$$

$$x \in [80, \infty) \quad \$4.80 = 0.06(80) \leq t = 0.06x$$

46. a. When $A = 10.5$,

$$H = 2.31(10.5) + 31.26$$

$$H \approx 55.52$$

$$H \pm 5\% \approx 55.52 \pm 2.78$$

$$52.74 \leq H \leq 58.30$$

b. When $A = 5.75$,

$$H = 2.31(5.75) + 31.26$$

$$H \approx 44.54$$

$$H \pm 5\% \approx 44.54 \pm 2.23$$

$$42.31 \leq H \leq 46.77$$

50. $1000 + 0.062S \geq 3500$

$$0.062S \geq 2500$$

$$S \geq \$40,322.58$$