#42, p. 147

4,756,505 tons - capacity

2,896,112 tons - currently holding

~1600 tons - added per day

y = currently holding

x = # of days from now

$y = 2{,}896{,}112$ (if x is ∅)

(a) $y = 2{,}896{,}112 + 1600x$

(b) $4{,}756{,}505 = 2{,}896{,}112 + 1600x$

$\pm 2{,}896{,}112 = \pm 2{,}896{,}112$

$$\frac{1{,}860{,}393}{1600} = \frac{1600x}{1600}$$

$$\sim 1163 = x$$

#44, p147

400 - eat inside

120 - take out

? - how many days until total customers = 2600?

n = total # of days

t = total # of customers

$t = 520n$

$$\frac{2600}{520} = \frac{520n}{520}$$

$$5 = n$$

#38, p. 145

$124 = repair cost

total cost of repairs = cost of parts + cost of labor

$76 = cost of parts

$32/hr = labor charge

t = time to repair (hours)

$$\$124 = \$76 + 32t$$
$$+^{-}76 \quad +^{-}76$$

$$\frac{48}{32} = \frac{32t}{32}$$

$$1.5 = t$$

More complicated problems:

- Might require that you combine like terms:

$$5x + 4 - 2x = 7$$

$$3x + 4 = 7 \ldots.$$

- Might need to use the distributive property:

$$3y + 4(y + 7) = 25$$

$$3y + 4y + 28 = 25$$

$$7y + 28 = 25 \ldots$$

- Sometimes, you can shortcut the distributive property:

$$\frac{3}{2} \cdot \frac{2}{3}(7x + 14) = 119 \cdot \frac{3}{2}$$

$$7x + 14 = \frac{357}{2}$$

— or —

$$\frac{2}{3}(7x + 14) = 119$$

$$\frac{14x}{3} + \frac{28}{3} = 119$$

$$+\frac{-28}{3} \quad +\frac{-28}{3}$$

Homework:

p. 150 3-54 (every 3rd)