Section 5.1
Applications

A company is planning to manufacture wheelchairs. Fixed cost will be $500,000 and it will cost $400 to produce each wheelchair, which will be sold for $600.

Write the cost function, C, of producing x wheelchairs.

$$C(x) = 500,000 + 400x$$

Write a revenue function, R, from the sale of x wheelchairs.

$$R(x) = 600x$$

Determine the break-even point.

$$500000 + 400x = 600x$$
$$500000 = 200x$$
$$x = 2500 \text{ chairs}$$

The sum of two numbers is 2. If one number is subtracted from the other, their difference is 8. Determine the two numbers.

$$\text{Let } x = 1^{st} \#$$
$$y = 2^{nd} \#$$

$$x + y = 2 \longrightarrow 5 + y = 2$$
$$\underline{+(x - y = 8)}$$
$$2x = 10 \qquad y = ^-3$$
$$x = 5$$

One Snickers bar and two Reese's Peanut Butter Cups contain 737 calories. Two Snickers bars and one Reese's Cup contain 778 calories. Determine the caloric content of each candy bar.

Let $S = $ ~~# of~~ Snickers cals

$R = $ ~~# of~~ Reese's cals

$2S + 4R = 1474$ ← cals in a Snickers

$-(2S + R = 778)$

$3R = 696$

$R = 232$ calories in each Reese's

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section remains...

43. 3 and 4

61. a. C(x) = 20x+18,000

b. R(x) = 80x

c. (300, 24,000)

68. 2020- 48% for and 48% against

73. Mr. Goodbar- 264 calories

Mounds- 258 calories