

Math 135: Chapter 3: Word Problems

Section 3.2:

1. A number, twice that number, and one-third of that number are added. The result is 330. What is the number?
2. Six less than one-third of the sum of a number and four is negative two. Find the number.
3. A theatre sells five times as many popcorns as it does candies. If the total number of popcorns and candies sold in one day was 420, how many of each were sold?

Section 3.3:

1. In a basketball game, the home team scored 12 points more than two-thirds the away team's score. A total of 132 points were scored. How many points were scored by each team?
2. The Langston Coliseum has a total of 800 seats. The balcony level holds the fewest seats. The main floor level has 180 more seats than the balcony level. The orchestra level has 60 seats fewer than twice the number in the balcony level. How many seats are in each level? (Hint: let x be the number of seats in the balcony level.)

Section 3.4:

1. Find the interest on a loan of \$2500 that is borrowed at a simple interest rate of 9% for 3 months.
2. A business executive rented a car. The car rental company charged \$39 per day and \$0.28 per mile. The executive rented the car for two days and the total rental cost was computed to be \$176. How many miles did the executive drive the rented car? Set up and solve an equation to find the answer.

3. A sofa was marked down with the following sign: “The price of this sofa has been reduced by 23%. You can save \$138 if you buy now.” What was the original price of the sofa? Set up and solve an equation to find the answer.
4. Bob had exactly \$2.55 in quarters and dimes. He had one fewer quarter than he had dimes. How many coins of each type did he have? Set up and solve an equation to find the answer.

Section 3.5:

1. A small plot of land is in the shape of a rectangle. The length is 7 meters longer than the width. The perimeter of the rectangle is 86 meters. Find the dimensions of the rectangle.
2. The three side lengths of a certain triangle are consecutive integers (like 4, 5, 6). The triangle’s perimeter is 234 m. Find the side lengths of the triangle.
3. A certain cylinder’s volume is 235.5 cubic feet. Find the height if the radius is 5 feet. The formula for the volume of a cylinder is $V = \pi r^2 h$.

Section 3.6:

1. A manufacturing company makes lightbulbs. During quality control, a sample of five bulbs is selected and tested. The average number of hours the five bulbs must last is at least 900 hours. The test engineer found that four bulbs lasted 850, 1050, 1000, and 950 hours. For what range of hours must the fifth bulb last in order to meet the standard?
2. Petra’s remaining budget for entertainment in a certain month is

$$\text{budget} = 200 - 60x$$

where x is the number of video games she bought. If her budget is at least \$75, how many video games did she buy?