

## Graded Homework 13

Word Problems – Show your work, no guessing.

1. Find two consecutive positive integers such that the sum of their squares is 265.
2. A rectangle has a diagonal of 13 inches. The length of the rectangle is 2 inches more than twice the width. What are the dimensions of the rectangle?
3. A gentleman spent  $\frac{1}{5}$  of his monthly salary for rent and  $\frac{1}{6}$  of his monthly salary for his car payment. If \$950 of his monthly salary remained, what was his monthly salary?
4. An airplane can fly 650 mph in calm air. If it can travel 2800 miles with the wind in the same time it can travel 2400 miles against the wind, find the wind speed.
5. To estimate the height of an office building an engineer (6 feet tall) notices that his shadow is 2 feet long. At that same time, he measures the length of the shadow of the building to be 25 feet long. What is his estimate of the height of the building?
6. The difference between two positive numbers is 6. If twice the smaller is added to the square of the larger, the result is 348. What are the numbers?
7. The perimeter of a rectangle is 24 meters and its area is 27 square meters. Find the dimensions of the rectangle.
8. ABC Car Rental charges \$25 per day plus \$0.12 per mile. What would you pay per day for renting a car from ABC if you were to drive the car  $x$  miles one day?
9. A computer programmer was told that he would be given a bonus of 5% of any money his programs could save the company. How much would he have to save the company to earn a bonus of \$1000?
10. A swarm of bees grows according to the formula  $P = P_0 e^{0.35t}$  where  $P_0$  is the number of bees present initially and  $t$  is the time in days. How many bees will be present in 6 days if there were 1000 present initially?