

Goal: Increase skill for translating a word problem into “algebra”.

Statement of Word Problems

- 1) The Cheaper-Than-U car rental company charges costumers a daily rate of \$35 to rent a Jeep, plus \$0.15 per mile travelled. If a customer rented a Jeep for one day and was charged a total of \$75.95, how many miles did they travel?

- 2) In order to prepare for an upcoming triathlon, Frank trained on an 81-mile course by jogging (at a pace of 10 miles per hour) to his bike and then riding his bike (at a pace of 16 mph) the rest of the course. If Frank completed this training in 6 hours, how far was the biking section of the training?

- 3) Jim has 40 coins in his pocket (nickels and dimes only) with a total value of \$3.10. How many of each type of coin does he have?

- 4) Sally and Vanessa live 32.5 miles apart. Sally leaves her house on her Segway, heading towards Vanessa’s house, at 5 mph. Vanessa leaves her house two hours after Sally, riding her horse at a rate of 13 mph, heading towards Sally. How long after Vanessa leaves will she run into Sally?

- 5) Wesley is trying to get home for Christmas, which is 300 miles from this apartment at WSU. His plan is to drive to a bus station (at an average rate of 55mph) and take the bus the rest of the way home. If the bus ride covers 135 miles of the trip, how long did it take him to get to the bus station?

- 6) The Everett Ballet has sold out its season opening performance. It has two ticket prices, \$15 for general admission and \$20 for balcony seating. They ended up selling three times as many general admission tickets as balcony tickets. If they brought in \$16,250 in revenue for the performance, how many of each did they sell?

- 7) Jessica went on a spending spree at express.com. They were having a clearance sale on all of last year’s tops. The sale priced all of the shirts at either \$6 or \$13. If Jessica was able to buy 14 tops for \$147, how many did she buy at each price?

Equations - Going backwards

These equations were constructed from the word problems on the first page. Take each equation and “work backwards”. A sample is done below. Please note, that you might read the problems on this first page and come up with a different equation that perfectly reflects the problem. For now, we are working on going backwards – not writing the equations.

1.

$$\overbrace{79.95}^{\text{\$ total on car rental}} = \overbrace{35}^{\text{\$ for one day}} + \overbrace{.15 * x}^{\text{\$ spent for mileage}}$$

- *\$79.95 is the total cost of the rental*
- *The cost of the rental is \$ for one day plus \$ for each mile.*
- *The mileage cost is $.15 * x$ where x is the number of miles.*
- *The cost for one day is \$35. The cost for each mile is 15 cents.*

2.

$$81 = 10 * x + 16 * (6 - x)$$

3.

$$3.10 = .05 * (x) + .10 * (40 - x)$$

4.

$$32.5 = 5 * (x + 2) + 13 * (x)$$

5.

$$300 = 135 + 55 * (x)$$

6.

$$16,250 = 15 * (3x) + 20 * (x)$$

7.

$$147 = 6 * (x) + 13 * (14 - x)$$