Average Potpourri - Guided Lesson Explanation

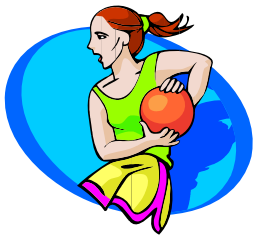
1. To find the average of any data set, we follow this equation:

sum of all terms ÷ number of terms

Looking at the data set we have (56.4, 89.4, 845.2, 17.2, 465.75, 172.4) we can fit the data into the equation as:

(56.4 + 89.4 + 845.2 + 17.2 + 465.75 + 172.4) ÷ 6 (There are 6 terms)

1,646.35 ÷ 6 = 274.39



2. Like the problem above, we will use the same strategy to determine the average number of points that Gabby scored over seven games. The challenge here is to determine the data set itself. We are looking for the number of points that Gabby scored each over the 7 games. We know the number of points she scored on the first and last game. We are told that after the first game she scored 3 more points than the last game. We can convert that to an equation for to tell us for game 2 through game 6 she scored: (number of points from last game) + 3. We can sum this all up now as:

Game 1 = 22 points	Game 2 = (Game 1 points + 3)	Game 3 = (Game 2 points + 3)
Game 4 = (Game 3 points + 3)	Game 5 = (Game 4 points + 3)	Game 6 = (Game 5 points + 3
Game 7 = 45 points		

Putting the figures together, we will get:

Game 1 – 22, Game 2 – 25, Game 3 – 28, Game 4 – 31, Game 5 – 34, Game 6 – 37, Game 7 - 45

We can restate the data as: (22, 25, 28, 31, 34, 37, 45).

Using the same method as question 1, we can rearrange this as:

Average = (22, 25, 28, 31, 34, 37, 45) ÷ 7

Average = 222 ÷ 7 = 31.71 points per game

3. It helps to rewrite written sentences as equations or expression when trying to make sense of them mathematically. This sentence would translate to an equation in this manner:

The average of 15 and an unknown value is 11.

Step 1- The average indicates that we need to determine the sum of all the terms. In this case the only terms present are 15 and an unknown value we can just call x. So the sum would signified by 15 + x and since there are only two terms (15 and x), we would divide that sum by 2. What we have broken so far is indicated by

Average = (15 + x) ÷ 2

We are told that the average is 11, so we can substitute it into the equation we created.

11 = (15 + x) ÷ 2

Now we just solve for x by using inverse operations to solve algebraic equations. We highlight the steps below.

22 = (15 + x) **(Multiply both sides by 2)**

22 = 15 + x (**Drop the parathesis since there are only two terms)**

7 = x **(Subtract both sides by 15)**