Earnings and unemployment rates by educational attainment

The Bureau of Labor statistics share this data to describe the difference in earnings and unemployment rates by the amount of education attained.

(1) Take a look at the median weekly earnings column. Name the group makes the highest amount per week, the lowest amount per week and name two groups in the middle.

(2) What is the difference in weekly earnings between the group that has a Bachelor’s Degree and the group that has completed Some college, no diploma?

(3) Over the course of a year, how much more would the group that has a Bachelor’s Degree earn compared to the group that has completed Some college, no diploma?

MATH STANDARDS ALIGNMENT:
Fluently add and subtract multi-digit whole numbers using the standard algorithm.
Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

METHOD 1: STANDARD CALCULATIONS
(1) The group with the highest earnings is “Doctoral Degree” and the group with the lowest earnings is “Less than a high school diploma.” Two other groups in the middle are “Masters Degree” and “High School Diploma.”

(2) The “Bachelor’s Degree group” has a median weekly income of $1,108 and the “Some college, no diploma” has a median weekly income of $727. To find the difference between the two I will subtract $727 from $1108.
So the Bachelor’s degree group makes $381 more per week.

(3) To calculate the difference over a whole year, I first need to know how many weeks in a year there are. There are 52 weeks in a year. So I need to multiply 52 weeks by $381 per week.

The Bachelor’s degree group makes $19812 more than the Some college, no degree group.

METHOD 2: BREAKING THE PROBLEM INTO SIMPLER PIECES
(1) The group with the highest earnings is “Doctoral Degree” and the group with the lowest earnings is “Less than a high school diploma.” Two other groups in the middle are “Associates Degree” and “Professional Degree.”

(2) The “Bachelor’s Degree group” has a median weekly income of $1,108 and the “Some college, no diploma” has a median weekly income of $727. To find the difference between the two I can figure out how much I would need to add to $727 to reach $1108.

- I can start by adding $3 to get to $730
- I can then add $70 to get to $800
- I can then add $200 to get to $1000
- I can then add $108 to get to $1108

Here’s a picture of how I was thinking about it:

To figure out how much I added all together I can add $3 + $70 + $200 + $108, I can do that in my head pretty quickly -- $381, and I can see that the Bachelor’s degree group makes $381 more per week.
To calculate the difference over a whole year, I first need to know how many weeks in a year there are. There are 52 weeks in a year. So I need to multiply 52 weeks by $381 per week.

I know that 10 times $381 is $3810. Since 5 groups of 10 is 50, I can see that 50 times $381 is the same as 5 groups of $3810 → I did this calculation in my head:

\[ $15000 + $4000 + 50 = $19050. \]

I just need to add 2 more groups of $381, I did this calculation in my head:

\[ $600 + $160 + $2 = $762. \]

To get 52 groups of $381 I added: $19050 + $762 = $19812

So in a year, the Bachelors groups makes $19812 more than the Some college, no degree group.