LESSON MAKER PRO

Weights That Matter

Practice, apply, and challenge your spreadsheet skills.

HIGH SCHOOL · MA.912.FL.1.3

MA.912.FL.1.3 "Solve real-world problems involving weighted averages using spreadsheets and other technology."

NAME _____ DATE _____

WEIGHTED AVERAGE

A weighted average gives more influence to values with larger weights. In a spreadsheet, place values in one column and weights in the next, then use =SUMPRODUCT(value_range, weight_range)/SUM(weight_range).

WORKED EXAMPLE

A club survey score is 84 for a group that makes up 40% of responses and 92 for a group that makes up 60% of responses. Find the weighted average with a spreadsheet.

1. Enter 84 and 92 in cells A2:A3.
2. Enter 40% and 60% in cells B2:B3.
3. Enter =SUMPRODUCT(A2:A3,B2:B3)/SUM(B2:B3) in another cell.

Answer: 88.8

PRACTICE 6 problems

1 Use a spreadsheet and a SUMPRODUCT formula. A course grade includes a quiz score of 74 worth 25% and a test score of 86 worth 75%. Find the weighted average.

ANSWER _____

2 Use a spreadsheet and a SUMPRODUCT formula. A student earns 90 points in a 1-credit class and 82 points in a 4-credit class. Find the weighted average score.

ANSWER _____

3 Use a spreadsheet and a SUMPRODUCT formula. A snack stand sells 2 smoothies for $6 each and 6 smoothies for $8 each. Find the weighted average price per smoothie.

ANSWER _____

4 Use a spreadsheet and a SUMPRODUCT formula. An investor puts $300 in an account earning 10% and $700 in an account earning 4%. Find the weighted average annual return.

ANSWER _____

5 Use a spreadsheet and a SUMPRODUCT formula. A class grade includes scores of 68 worth 20%, 88 worth 30%, and 98 worth 50%. Find the weighted average.

ANSWER _____

6 Use a spreadsheet and a SUMPRODUCT formula. A worker earns $15 per hour for 12 hours and $20 per hour for 18 hours. Find the weighted average hourly pay.

ANSWER _____

APPLY IT Show your work

1 Use a spreadsheet to find the weighted average. Jordan works 6 hours at $16 per hour at a café and 4 hours at $24 per hour helping at a concert. What is Jordan's average hourly pay for all 10 hours?

WORK SPACE

ANSWER _____

2 Use a spreadsheet to find the weighted average. For a media arts course, a student's project score is 87 and counts for 35% of the grade. The final presentation score is 93 and counts for 65% of the grade. What is the course grade?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Use a spreadsheet to test possible scores or use Goal Seek. A student's first assessment score is 80 and counts for 20% of the course grade. The second assessment score is 90 and counts for 30%. The final exam counts for 50%. What final-exam score is needed for a course average of 87?

WORK SPACE AND ANSWER

ANSWER KEY

Weights That Matter

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Use a spreadsheet and a SUMPRODUCT formula. A course grade includes a quiz score of 74 worth 25% and a test score of 86 worth 75%. Find the weighted average.	**83**
2	Use a spreadsheet and a SUMPRODUCT formula. A student earns 90 points in a 1-credit class and 82 points in a 4-credit class. Find the weighted average score.	**83.6**
3	Use a spreadsheet and a SUMPRODUCT formula. A snack stand sells 2 smoothies for $6 each and 6 smoothies for $8 each. Find the weighted average price per smoothie.	**$7.50**
4	Use a spreadsheet and a SUMPRODUCT formula. An investor puts $300 in an account earning 10% and $700 in an account earning 4%. Find the weighted average annual return.	**5.8%**
5	Use a spreadsheet and a SUMPRODUCT formula. A class grade includes scores of 68 worth 20%, 88 worth 30%, and 98 worth 50%. Find the weighted average.	**89**
6	Use a spreadsheet and a SUMPRODUCT formula. A worker earns $15 per hour for 12 hours and $20 per hour for 18 hours. Find the weighted average hourly pay.	**$18 per hour**

PART 2 · APPLY IT

1. **$19.20 per hour** Calculate (6 x 16 + 4 x 24)/(6 + 4) = 192/10 = 19.2. The weighted average hourly pay is $19.20.
2. **90.9%** Calculate 87(0.35) + 93(0.65). The total is 90.9.

CHALLENGE

88

Accept equivalent decimal and percent forms when appropriate, such as 0.058 for 5.8%. Students may use a SUMPRODUCT formula or calculate each weighted product and divide by the total weight.