

## Learning Project 5 Mean/Median

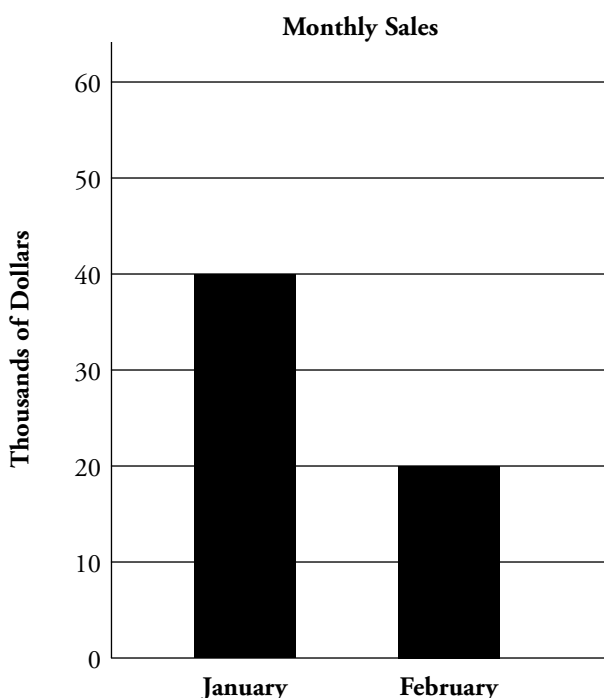
### Inquiry Activity 5-2: Exploring Mean

*(Note: Italicized portions should be directed to the students)*

#### 1. Identifying the Problem (Item #1, PA) Calculator Use Allowed.

*Read the question carefully, as you would if taking the actual test.*

1. Kelly's goal is to average \$25,000 per month in sales for the first three months of the year. Her sales for January and February are shown in the graph below.



**Calculator  
Allowed**



To reach her goal, what is the minimum amount of sales Kelly must make in March?

- 1) \$15,000
- 2) \$24,960
- 3) \$30,000
- 4) \$35,000
- 5) \$60,000.

*Here are some problem clarification questions you may want to consider when reading test questions.*

*What words and/or symbols might be important to understand to answer this problem and what are they telling you?*

Cannot know what words the learner will choose. The following represents a possible, though non-exclusive, list: average, per month, minimum amount.

*What words and/or symbols are unfamiliar and what do you think they mean?*

Here is a non-exclusive list of some of the words that may present problems with some learners: goal.



## **2. Becoming Familiar with the Problem**

*Ask yourself questions like these about the problem, taking note of the ones that were especially helpful so that you can remember to use them when you take the test.*

*Re-read the question.*

*What is the question asking you to find?*

How much Kelly has to make in March to average \$25,000 per month for a three-month period, when she has already made \$40,000 in January and \$20,000 in February?

*What information in the problem is relevant to finding the answer?*

The information from the graph: January made \$40,000 and February made \$20,000; the goal of averaging \$25,000 per month.

*Review the Formulas page that accompanies the practice test (your instructor will make a copy available to you). Is there any help for this problem on that page?*

*What do you know about finding answers to this type of problem?*

To find an average, I know I have to add the number items and divide by the number of items (add three numbers and then divide by three). But here I know what the average number is; what is missing is one of the numbers I should add. This sounds like finding an unknown in the algebra problems I just did.

## **3. Planning and Performing Tasks**

*Try to answer the test question any way you can, even if you have to guess, but try to be aware of the reasoning and operations that you are using. The following questions and strategies can be helpful.*

*Use your experience with similar problems to make sense of this one. Can finding unknowns in the algebra Inquiry Activities help here? Explain.*

*Read the directions for the calculator accompanying the GED Math test (which your instructor will provide) and determine if anything there helps you to use the calculator to solve this problem.*

*Find the answer and record the steps you used.*

*Check for the reasonableness of your answer.*

*Choose one of the answer choices.*

*Once you've chosen an answer, be ready to defend the way you found it.*

## **4. Sharing with Others**

*Telling other people what you know helps you to understand the material better. So take this opportunity not only to share your knowledge, but also to learn it more completely.*

**Small groups:** *Compare your answer to others in the group and explain why and how you found your answer and why it is correct. Write the answer in sentence form.*

*Share how you used your calculator. Take notes describing situations when you entered numbers in a different order and achieved a different result. Explain whether it is important to enter numbers in a certain order.*

*Agree on the correct answer and the step-by-step process to find that answer, both with and without the calculator and share with the whole class.*

*Did using the calculator make this problem easier or harder? Explain why you think so.*

## 5. Reflecting, Extending and Evaluating

**Reflecting:** *Think about what you learned.* (group activity or instructor led)

*Here are some questions to start you thinking about the experience you just had. Thinking about what you have learned and experienced is part of the learning process. When the focus is only on the answer, you don't get much time to think about what was learned.*

*How did your previous learning about algebraic equations in the other Learning Projects help you, or your small group, to approach this problem? In other words, can you write the problem in terms of an equation? Show your equation.*

$$\frac{40,000 + 20,000 + x}{3} = 25,000$$

$40,000 + 20,000 + x = 75,000$  (because averaging 25,000 a month for 3 months = 75,000 or by undoing the division on the left).

Learners may not originally use an equation, but it would helpful to think about the connection to equations.

*Read the definition of mean on the "Measures of Central Tendency" on the Formulas page. How helpful is that definition to you to solve this problem? Explain.*

*Could you undo the operations in the equation you created to find the value of the unknown. Explain.*

**Extending:** *Extend what you learned to new situations.*

*In extending, you are being asked to transfer the information presented in the Practice Test question to other information or situations you already know and maybe make new connections to other information.*

**In Small Groups:** *Develop at least two problems similar to the one in this Inquiry Activity. In one problem, the unknown should be the average. In the other problem, the unknown should be one of figures that make up the average that is given.*

*Each group should distribute its problems to the other groups for solution.*

*Discuss all the learner-created problems.*

**Evaluating:** *Assess what you learned and how you learned it.*

*In this last step, you get a chance to review both the content of what you learned and the methods used to learn. There are no right or wrong answers to these questions; it is your chance to look more closely at your learning style and the opportunity to state how you benefited or didn't benefit from the content and/or the methods to help you pass the GED test.*

*How have Learning Projects #3 and #4 helped you to analyze this problem?*

*How are you feeling toward algebra now in light of this problem where algebra can help find an answer?*