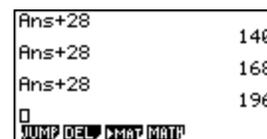
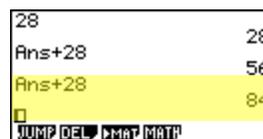
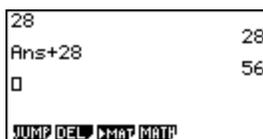
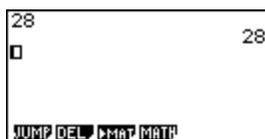


The following questions were gathered from the Louisiana Education Assessment Program's LEAP Practice Test - Grades 8 and 10. These samples items can be located by visiting <http://www.doe.state.la.us/lde/uploads/11694.pdf> & <http://www.doe.state.la.us/lde/uploads/11695.pdf>

1. An electronic device beeps every 21 seconds. Another beeps every 28 seconds. If they both start beeping at the same time, how many seconds will it be before the next time they beep together?
 - A. 588 seconds
 - B. 196 seconds
 - C. 84 seconds
 - D. 49 seconds

While this question assesses the concept of least common multiple, you can approach this question by generating a series of multiples for the largest number in the question. Using these multiples of 28, you can determine whether or not that multiple is also a multiple of 21.

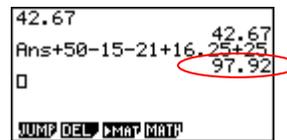
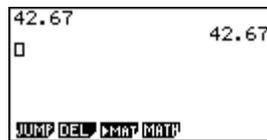
- Select the RUN icon from the Main Menu.
- Enter **2** **8** then **EXE**.
- To program the algorithm, press **+** followed by 28.
- Press **EXE**.
- Continue to press **EXE** to generate a list of multiples of 28.
- Examine the list and determine if any of those numbers is a multiple of 21.
- Looking at the information, the correct answer is 84 because 84 is divided by 28 and 84 is divided by 21.
- The correct answer is C.



2. Mei's bank balance was \$42.67. Her deposits and withdrawals since then can be represented as +\$50, -\$15, -\$21, +\$16.25, +\$25. What is her bank balance now?
- A. \$55.25
 - B. \$97.92
 - C. \$107.42
 - D. \$127.25

To solve problems like this, you may rely on mental math skills or pencil and paper strategies. Both approaches are good but utilizing a calculator like the *fx-9750GII* can help ensure accuracy when adding or subtracting from Mei's balance to obtain the correct answer.

- Select the RUN icon from the Main Menu.
- Enter 42.67 and press **EXE**.
- To this amount, enter the deposits and withdrawals.
- Press **EXE** to determine the answer.
- The correct answer is **B**, \$97.92.



3. Leanne goes to college in Louisiana, and her family lives in New York. Last week, Leanne's mother made four evening telephone calls to her. Listed below are the charges for the telephone calls.

| Charges | Minutes |
|---------|---------|
| \$0.60 | 4 |
| \$1.50 | 10 |
| \$1.80 | 12 |
| \$4.50 | 30 |

- A. Based on this information, what would be the charge for a 50-minute evening phone call?
- B. What is the maximum number of minutes a phone call could last for a charge of less than \$5.00? Explain your reasoning.
- C. What would be the cost (c) of an n -minute phone call to Leanne from her mother? Write your answer in the form of an equation where c is the cost, and n is the number of minutes?

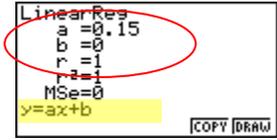
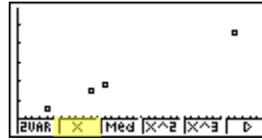
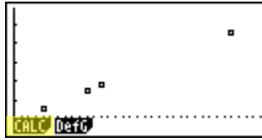
To begin this problem, you must determine the relationship between the charges and minutes in order to write an equation that models this problem. You can use the STAT mode on the *fx-9750GII* to enter the data into two lists and determine the equation of the line.

- Select the STAT icon from the icon main menu.
- Enter the amount of minutes in **List 1**.
- Enter the charges in **List 2**. (Do not include dollar signs.)
- Press **F1**(GRPH) for graphing options, then **F1**(GPH1) to graph a scatterplot.
- The data appears to be linear; to calculate the linear regression press **F1**(CALC).
- Press **F2**(X) to choose the form of the equation of a line.
- The regression value ($r =$) is 1 indicating a true linear relationship. To obtain the equation of the line, substitute the a - and b -values into the equation to get $y = 0.15x$.

| | List 1 | List 2 | List 3 | List 4 |
|-----|--------|--------|--------|--------|
| SUB | | | | |
| 2 | 10 | | | |
| 3 | 12 | | | |
| 4 | 30 | | | |
| 5 | | | | |

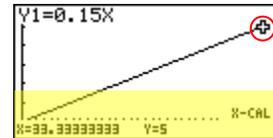
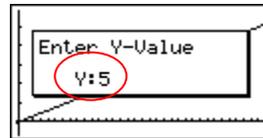
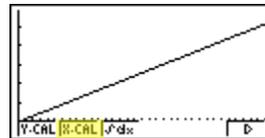
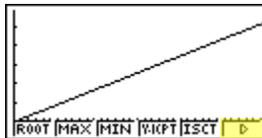
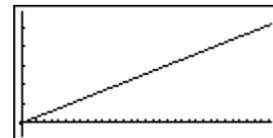
| | List 1 | List 2 | List 3 | List 4 |
|-----|--------|--------|--------|--------|
| SUB | | | | |
| 2 | 10 | 1.5 | | |
| 3 | 12 | 1.8 | | |
| 4 | 30 | 4.5 | | |
| 5 | | | | |

| | List 1 | List 2 | List 3 | List 4 |
|-----|--------|--------|--------|--------|
| SUB | | | | |
| 2 | 10 | 1.5 | | |
| 3 | 12 | 1.8 | | |
| 4 | 30 | 4.5 | | |
| 5 | | | | |



To answer part B:

- Select the GRAPH icon from the icon main menu.
- Enter the equation of the line: $y = 0.15x$
- Press **F6** (DRAW) to view the graph.
- Press **F5** (G-Solv) to display information that can be calculated from the graph.
- Press **F6** (\triangleright) to reveal the next set of soft keys.
- To determine the maximum number of minutes for a \$5.00 phone call, press **F2** (X-CAL), at the screen prompt, enter **5** for the y-value and **EXE** to calculate.
- From the data on the screen, the maximum amount of time for a \$5.00 phone call is 33.3 minutes.



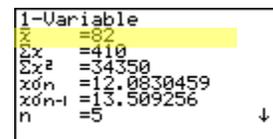
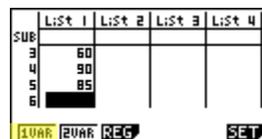
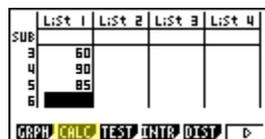
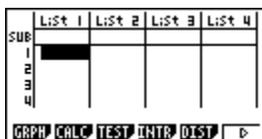
To answer part C:

- Replace x with n (number of minutes) and y with c (cost of phone call): $c = .15n$

4. Roy compared the prices for a tape player at 5 stores. The prices at the different stores were \$80.00, \$95.00, \$60.00, \$90.00, and \$85.00. What was the average (mean) price of the tape players?
- A. \$415.00
 B. \$410.00
 C. \$85.00
 D. \$82.00

Using the STAT mode of the fx-9750GII, you can enter the data into a list and perform 1-variable calculations on the data.

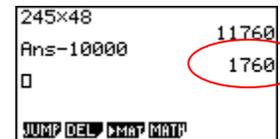
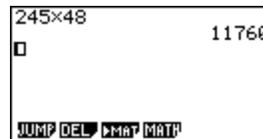
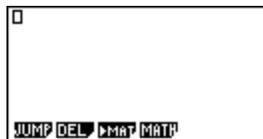
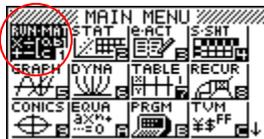
- Select the STAT icon from the icon main menu.
- Enter the prices into **List 1**, pressing **EXE** after each entry.
- Press **F2** (CALC) to calculate the data.
- Since there is only one variable in this data set, press **F1** (1VAR) statistics.
- The information displayed defines all necessary statistical information regarding this data set.
- The first piece of data " \bar{x} " tells you the mean (average) of the tape players.
- The correct answer is **D**, \$82.



5. Cindy borrowed \$10,000 to purchase a new car. She paid back \$245 per month over a period of four years, which covered the loan amount and the interest. What is the total interest Cindy paid?
- A. \$980
 - B. \$1,760
 - C. \$2,940
 - D. \$11,760

One of the advantages of using a graphing calculator like the *fx-9750GII* is that the larger screen enables the user to see all data entered for a multi-step problem. This problem expects the student to calculate how much money Cindy has spent in all and then subtract that amount from her initial loan of \$10,000. Use the larger screen to show all of the steps listed.

- Select the RUN icon from the Main Menu.
- Enter 245×48 (the number of months in four years) and press **EXE**.
- Pressing the **=** will cause the product to be displayed as ANS.
- Enter 10,000.
- Press **EXE** to determine your answer.
- The correct answer is **B**, \$1760.



6. Auto manufacturers are under pressure from the federal government to increase the gas mileage (miles per gallon) achieved by their cars and trucks. The Environmental Protection Agency (EPA) tests each model for mileage.

For ten different models offered by one manufacturer, the EPA mileages are as follows:

| Model | A | B | C | D | E | F | G | H | I | J |
|-------------|----|----|----|----|----|----|----|----|----|----|
| EPA Mileage | 13 | 18 | 21 | 25 | 28 | 28 | 30 | 32 | 36 | 39 |

In the next model year, the EPA mileage for Model F will increase to 30 and model J will be replaced by a new model with an EPA mileage of 37. What statistic will **not** be affected by these people?

- A. the mean
- B. the median
- C. the mode
- D. the range

You can use the STAT mode on the *fx-9750GII* to enter the original data into one list then enter the data with the adjustments to Models F & J in another. From there, you can perform a 1-variable statistical analysis to determine which measure of central tendency is not affected.

- Select the STAT icon from the icon main menu.
- In **List 1**, enter the EPA Mileage displayed in the table, pressing **EXE** after each entry.
- In **List 2**, amend the data for Models F & J, pressing **EXE** after each entry.
- Press **F2** (CALC) then **F2** (2VAR) to obtain the analysis for 2-variable statistics.
- **▲ ▼** determine the measures for **List 1** (x) and **List 2** (y). The correct answer is **A**, because the means remain the same between the two lists.

The sequence of screens shows the following steps:

- MAIN MENU:** The STAT icon is selected.
- List 1 Entry:** Values 13, 18, 21, 25, 28, 28, 30, 32, 36, 39 are entered into List 1.
- List 2 Entry:** Values 28 and 37 are entered into List 2.
- 2-Variable Statistics:** The calculator displays statistics for List 1 (x) and List 2 (y). A red circle highlights the mean values: $\bar{x} = 27.8$ and $\bar{y} = 27.8$.

This question is gathered from the Algebra I End-of-Course (EOC) Test Assessment Guide

7. In 2003, two scientists began studying the number of black bears in a forest. To model the number of black bears, Dr. Becker uses the equation $N = 8t + 114$, and Dr. Yang uses the equation $N = 9t + 110$, where N is the number of black bears, and t is the number of years after 2003.

Based on the equations, which scientist expects the number of black bears to increase the fastest? Explain your reasoning.

This question makes a comparison between two equations. The easiest way to determine which equation shows the fastest increase in bears is to look at the slope of each equation. Dr. Yang's equation has a steeper slope than Dr. Becker. However, you can create a graph on the *fx-9750GII* to see the fastest increase and determine which equation has the steepest slope.

- Select the GRAPH icon from the icon main menu.
- In **Y1** enter: $8X + 114$ (substitute X for t); in **Y2** enter: $9X + 110$ (substitute X for t).
- Press **F6** (DRAW) to display the graph of the functions.
- The View Window is currently set to the Standard Window; to view the graph, press **F2** (Zoom), **F5** (AUTO) to automatically fit the graphs to the screen.
- **◀ ▶ ▲ ▼** to where you can see a distinct separation between the graphs.
- Press **F1** (Trace) to trace the functions; the cursor will blink on the **Y1** function first.
- Press **▲** to trace **Y2**.
- By looking at the y -values displayed for each graph on the bottom of the screen, you can see that **Y2** increases at a quicker rate than **Y1**.
- The answer is Dr. Yang's equation, $N = 9t + 110$ will show the quicker increase in black bears.

