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| --- | --- | --- |
| 1. Determine the factored form of the following quadratic function. *y = x2 + 11x + 18*
 | 1. Determine the factored form of the following equation. *y = 6x2 – 48x + 42*
 | 1. What is the factored form of *x2 + 2x – 8*?
 |
| 1. Determine the solutions to the following quadratic function. 3x2 = 45
 | 1. Determine the solutions to the following quadratic function. *4x2 + 5x = 3*
 | 1. [image]Determine the vertex for the graph below.
 |
| 1. Determine the increasing interval for the graph in Question 6.
 | 1. Tell whether the graph of the quadratic function *y = −3x2 + x + 1* opens upwards or downward.
 | 1. Write the quadratic equation of the graph of the parent function, y = x2, that has been shifted up 5 units and shrunk by a factor of one-fourth.
 |
| 1. What is the vertex and axis of symmetry of the quadratic: y = –4(x + 7)2 – 5?

**Vertex = (\_\_\_\_\_\_\_, \_\_\_\_\_\_\_)****Axis of Symmetry = *x = \_\_\_\_\_\_\_*** | 1. What is the vertex of *y = x2 + 8x + 12*?

$$x=\frac{-b}{2a}$$ | 1. If *x2 + 13x + 30 = 0*, what are the possible values of *x*?
 |
| 1. Factor the following: *6x2 -13x + 5*
 | 1. Liam catapults a rock at 96 ft/s from a height of 15 feet. The height of the rock is modeled by the equation: h(t) = -16t2 + 96t + 15. At what time does the rock reach its maximum height?

$$x=\frac{-b}{2a}$$ | 1. This function models the height, f(x), in feet, of a ball x seconds after it has been tossed into the air, *f(x) = –16x2 + 48x + 64.* Which statement describes the ball 1.2 seconds after it is tossed into the air?

$$x=\frac{-b}{2a}$$ |
| 1. Which is the *only* function that might have an *end behavior* such that:

As x → ∞, y → -∞. And as x → -∞, y → ∞ | 1. Which is the *only* type of function that could have a *range* of (-3, ∞)?
 | 1. Which is the *only* type of function that could have an increasing and a decreasing interval?
 |
| 1. Determine the best description of the equation*: f(x) = -2x + 7* (using 2 words)*.*
 | 1. Determine the best description of the table (using 2 words):

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| x | –3 | –2 | –1 | 0 | 1 | 2 |
| f(x) | 8 | 4 | 2 | 1 | ½ | ¼ |

 | 1. Draw an example of a scatter plot that best represents a model of *exponential* growth?
 |
| 1. Determine the equation for the following situation: *Lillian began with 2 wildflowers. She noticed that her flowers tripled every year*.
 | 1. Write the appropriate function that represents the table.

$$y=a(x-h)^{2}+k$$

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| x | 0 | 1 | 2 | 3 | 4 |
| f(x) | 3 | 0 | **–**1 | 0 | 3 |

 | 1. Write an example of a linear function?
 |
| 1. Write an example of an exponential function?
 | 1. Write an example of a quadratic function?
 | 1. C:\Program Files\TI Education\TI InterActive!\TIIimagefile5808.gifDetermine if the graph is even, odd, or neither.
 |
| 1. Determine if the following function is even, odd, or neither. *f(x) = 3x2 + 7*
 | 1. What is the mean and the median If the following set of numbers?

12, 23, 25, 25, 30, 31, 34, 35, 35, 37, 43**Mean =**  **Median =**  | 1. What is the range of the following data set?

$$range=max-min$${11, 12, 10, 14, 4, 5} |
| 1. The box and whisker plot represents a data set. Identify the median, maximum, interquartile range, and lower quartile.

**Median:** **Maximum:****IQR:** **Lower Quartile:** | 1. Draw a picture of a data set with more variability and less variability.
 | 1. Which description most accurately describes the correlation?
 |
| 1. The histogram below gives represents ACT scores for randomly selected students. How many students have scores that fall between 15 and 25?
 | **Use the frequency table below to answer questions 35 – 36.** The following frequency table displays the number of students in a school club.  | 1. How many males participate in the yearbook club?
2. What is the percentage of students in band?
 |
| 1. Draw an example of a graph that would have an *r*-value closest to +1.
 | 1. The scatter plot shows the mean study time and the mean test scores for a class. Based on the data, what grade would you expect a student to make who studied for 2.25 hours?
 | 1. Here are the number of text messages students send to each other on a daily basis:

25, 23, 17, 15, 19, 21, 28, 30, 26, 28What is the median of the data set? |
| 1. Given the box plot below, what is the interquartile range?

$$IQR=Q3-Q1$$ | **For Questions #41 – 50, answer using TRUE or FALSE.**1. When a quadratic expression consists of two perfect square terms which are being subtracted, then this quadratic can be factored using the difference of squares method.
 | 1. Completing the Square is a method for solving linear equations.
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| 1. Quadratic functions whose graphs open upward have local minimum.
 | 1. The vertex of a quadratic function always lies on the axis of symmetry.
 | 1. When comparing linear growth and exponential growth, the exponential function will always eventually win.
 |
| 1. The interquartile range of a set of data can be found by subtracting the maximum and the minimum.
 | 1. Data with a strong positive correlation will have a correlation coefficient close to negative one.
 | 1. Joint frequencies can be found in the middle of a Two-Way Table.
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| 1. A constant is a number which is multiplied by a variable.
 | 1. When using interval notation, open points are indicated by square brackets.
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