|  |  |
| --- | --- |
| **Math 1 -Released Exam Parallel Test [2763831]** | |
|  | **Questions 1-17 are calculator Inactive.**  1. Which choice is the graph of y = (x+1) (2-x) ? |
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|  | |  |  |  |  | | --- | --- | --- | --- | | **A.** | |  |  | | --- | --- | | **B.** |  |   data:image/png;base64, data:image/png;base64, | |
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|  |  |
|  | |  |  |  |  | | --- | --- | --- | --- | | **C.** | |  |  | | --- | --- | | **D.** |  |   data:image/png;base64, data:image/png;base64, | |
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| **2.** | In which graph does the shaded region represent the solution set for the inequality shown below?  x - 2y > 2 | | |
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|  | |  |  |  |  | | --- | --- | --- | --- | | **A.** | |  |  | | --- | --- | | **B.** |  |   data:image/png;base64, data:image/png;base64, | | | |
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|  | |  |  |  |  | | --- | --- | --- | --- | | **C.** | |  |  | | --- | --- | | **D.** |  |   data:image/png;base64, data:image/png;base64, | | | |
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|  |  | | |
| **3.** | | Which expression is equivalent to (2x-3) (x+5)? |
|  | |
|  | | |  |  | | --- | --- | | **A.** | 2x2 + 13x -15 | |
|  | |  |
|  | | |  |  | | --- | --- | | **B.** | 2x2 + 7x -15 | |
|  | |  |
|  | | |  |  | | --- | --- | | **C.** | 2x2 + 2x -15 | |
|  | |  |
|  | | |  |  | | --- | --- | | **D.** | 2x2 + 2x +15 | |
|  | | Questions #4 –5 are numeric response. |
| **4.** | | A line, y = mx +b, passes through the point (2,3) and is parallel to y = 2x + 3. What is the value of b? | |
|  | |  | |

|  |  |
| --- | --- |
| **5.** | Two functions are shown below.  f(x) = /files/assess_files/69bb350c-d819-4356-a9b4-662010f135a8/fa4e32d2-f46b-4e0b-b3d1-f38966e9e2e6.png  g(x) = 2x + 4  What is the largest integer value of x such that f(x) < g(x) ? |
|  |  |

Questions #6 – 10 are multiple choice.

|  |  |
| --- | --- |
| **6.** | Susan has 48 coins totaling $8.00 and the coins are all nickels and quarters.  Which system of equations can be used to determine the number of nickels, n, and quarters, q, that Susan has? |
|  |
|  | |  |  | | --- | --- | | **A.** | n + q = 8 **B.** n + q = 8  .05n + .25q = 48 48n + 48q = 8 | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | n + q = 8 **D.** n + q = 48  .05n + .25q = 50 .05n + .25q = 8 | |
|  |  |
| **7.** | Suppose a company has daily production costs that are modeled by the function *C*(*x*) = 800 – 10*x* + 0.25*x*2, where *C* is the total cost in dollars and *x* is the number of units produced. How many units should be produced each day to ensure the lowest cost? |
|  |
|  | |  |  | | --- | --- | | **A.** | 17 units **B**. 18 units **C.** 19 units **D.** 20 units | |
|  |  |
|  |  |
| **8.** | A company represents their profit with the function, *p*(*x*) = *x*2 – 5*x –* 300, where *x* represents the number of units sold. How many units will the company need to sell in order to break even? |
|  |
|  | |  |  | | --- | --- | | **A.** | 3 | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | 15 | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | 20 | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | 25 | |
|  |  |
|  |  |
| **9.** | **A factory has 161 workers. There are 92 more males than females. Let *x* represent the number of males and let *y* represent the number of females. Which system of equations represents this situation?** |
|  |
|  | |  |  | | --- | --- | | **A.** | /files/assess_files/449f0d1a-e32a-43c0-8ab9-8981f9eedff3/0ecca124-1cbe-4354-85cd-d73d33e6d633.png /files/assess_files/449f0d1a-e32a-43c0-8ab9-8981f9eedff3/3ff11819-be13-46f8-b866-fff247724482.png | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | /files/assess_files/6f191b68-2dd4-4d48-97a8-35912db6457b/4eecb33a-0e2c-485c-9e67-c0c0b609022e.png /files/assess_files/6f191b68-2dd4-4d48-97a8-35912db6457b/f4869bed-6465-4b63-aaa3-ea6e2f6de313.png | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | /files/assess_files/84b72dc9-d76e-4543-ae27-6dff44e5284b/20126e57-e648-40ca-b4a1-c917bbc740e0.png /files/assess_files/84b72dc9-d76e-4543-ae27-6dff44e5284b/7eb3d9a1-7a33-4f33-8535-666996789344.png | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | /files/assess_files/82fa0038-a9c1-4c62-8429-7cbe012e7d09/5cd148b5-2857-4eb3-8600-8d3af583f95e.png /files/assess_files/82fa0038-a9c1-4c62-8429-7cbe012e7d09/d064c7b8-5082-48a4-9892-dab1f611cba0.png | |
|  |  |
|  |  |

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| **10.** | The function *f*(*x*) = 37*x* + 20 models the total cost for Rachel to be a member at a gym for *x* months. What can be interpreted from the *y*-intercept of the function? |
|  |
|  | |  |  | | --- | --- | | **A.** | Rachel must pay $37 per month to use the gym. | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | Rachel must pay $20 per month to use the gym. | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | Rachel must pay a $37 membership fee to join the gym. | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | Rachel must pay a $20 membership fee to join the gym. | |
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|  |  |

Question #11 is numeric response.

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| --- | --- |
| **11.** | Romario calculated the amount of money he has in his savings account, *S*(*w*), using the equation, *S*(*w*) = 2,950 – 75*w*, where *w* is the amount of money he spends each week. How much money is in Romario’s account after 17 weeks? |
|  |  |

Questions #12 – 14 are multiple choice.

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| **12.** | A company has a budget of $1,700 for a banquet. A banquet hall charges $150 to rent a room, plus $30 per guest. What is the maximum number of guests that can attend the banquet for the costs to remain under the budget? | | |
|  |
|  | |  |  | | --- | --- | | **A.** | 51 people | | | |
|  |  | | |
|  | |  |  | | --- | --- | | **B.** | 52 people | | | |
|  |  | | |
|  | |  |  | | --- | --- | | **C.** | 56 people | | | |
|  |  | | |
|  | |  |  | | --- | --- | | **D.** | 57 people | | | |
|  |  | | |
| **13.** | | The Randolph family has a 100-acre farm where the family raises two crops, *x* and *y*. The Randolphs take part in a government grant program which requires them to plant at least 20 acres of each crop. It costs the Randolphs $20 per acre to raise crop *x* and $40 per acre to raise crop *y*. The family has $2,600 to cover costs.   Which system of inequalities represensts these constraints? | |
|  | |
|  | | |  |  | | --- | --- | | **A.** | x + y ≤ 100 B. x + y ≤ 100  20x + 40y≤ 2600 20x + 40y≤ 2600  x ≥ 0 , y ≥ 0 x ≥ 20 , y ≥ 20 | | |
|  | |  | |
|  | |  | |
|  | | |  |  | | --- | --- | | **C.** | 20x +40 y ≤ 100 D. 20x +40 y ≤ 100  x + y≤ 2600 x + y≤ 2600  x ≥ 0 , y ≥ 0 x ≥ 20 , y ≥20 | | |
|  | |  | |
|  | |  | |
| **14.** | | /files/assess_files/96dd7edf-0b7c-42ce-bdc3-11a76afa83bc/images/1aa14fafdcefba854dbb7f4398b60e4e.pngThe formula that describes an object’s motion is given by   where *S* is the  distance traveled, *u* is the initial velocity, *a* is the acceleration, and *t* is the time.  Which equation represents *a* in terms of the other variables? | |
|  | |
|  | | |  |  | | --- | --- | | **A.** | /files/assess_files/9b451cf7-9e99-4602-a98c-2fc6f2e265a3/images/6348e5a72edc98288f92530558fa11af.png | | |
|  | |  | |
|  | | |  |  | | --- | --- | | **B.** | /files/assess_files/f8142d76-27f4-4123-8cd7-2819b7e819c3/images/89daec3cf9db2c9e2a8a2c4d8e199047.png | | |
|  | |  | |
|  | | |  |  | | --- | --- | | **C.** | /files/assess_files/31c91701-a1d3-4bbe-9f19-94eacfe89fe5/images/bfe9e27c95081648fa63ae628137ffa1.png | | |
|  | |  | |
|  | | |  |  | | --- | --- | | **D.** | /files/assess_files/60fa5084-d268-47e1-b38e-0f9cc94ceaa9/images/69bf306f0ea66ca5dbe890f63827a217.png | | |
|  | |  | |
| Questions #15 – 17 are numeric response. | | |  |
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| --- | --- |
| **15.** | What is the value of the positive zero of the function, g, defined by:  g(x) = x2- 144? |
|  |  |

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| --- | --- |
| **16.** | What is the value of x in the system of equations shown below?  3x + 5y = 21  y = 3 - x |
|  |  |

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| --- | --- |
| **17.** | What is the value of the larger zero of the function f(x) = 3x2 -14x +15? |
|  |  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Questions 18-53 are Calculator Active**  18. The table below shows the average amount of time Jessica spent on homework each night in  grades 8 through 11.   |  |  | | --- | --- | | **Grade Level** | **Time** | | 8 | 2 hours 10 minutes | | 9 | 2 hours 40 minutes | | 10 | 3 hours 5 minutes | | 11 | 3 hours 20 minutes |   What type of correlation exists between grade level and time spent on homework? | |
|  | |
|  | | |  |  | | --- | --- | | **A.** | strong positive correlation | | |
|  | | |  |  | | --- | --- | | **B.** | weak positive correlation | | |
|  | | |  |  | | --- | --- | | **C.** | strong negative correlation | | |
|  | | |  |  | | --- | --- | | **D.** | weak negative correlation | | |
|  | |  | |
| **19.** | The data below represent the ages of several people in a class.   |  |  | | --- | --- | | **Person** | **Age** | | Mr. Smith | 45 | | Sam | 12 | | Chris | 11 | | Lovell | 13 | | Christina | 12 | | Susan | 12 |   What effect does Mr. Smith’s age have on the data set? | | |
|  |
|  | |  |  | | --- | --- | | **A.** | Mr. Smith’s age increases the mode of the data. | | | |
|  |  | | |
|  | |  |  | | --- | --- | | **B.** | Mr. Smith’s age decreases the mean of the data. | | | |
|  |  | | |
|  | |  |  | | --- | --- | | **C.** | Mr. Smith’s age increases the mean of the data. | | | |
|  |  | | |
|  | |  |  | | --- | --- | | **D.** | Mr. Smith’s age decreases the median of the data. | | | |
|  |  | | |
|  |  | | |
| **20.** | | **Select the answer from the menu.**   **Function *f*(*x*) is given by the equation *f*(*x*) = *x*2 + 6*x* + 9. Function *g*(*x*) is given by the table shown.**   |  | | --- | | ***g*(*x*)** | | |  |  | | --- | --- | | ***x*** | ***y*** | | **−8** | **16** | | **−6** | **4** | | **−4** | **0** | | **−2** | **4** | |   **Function *f*(*x*) has a**  1 - (A) smaller minimum (B) larger minimum (C) smaller y-intercept (D) larger y-intercept   **than function *g*(*x*).** | |
|  | |  | |
| **21.** | | Numeric Response: Find the value of x in the equation shown below  3(x +7) - 5x = 10x -3 |
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|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **22.** | Three systems of equations are shown below.  Drag the choice that describes the number of solutions of each system   |  |  |  | | --- | --- | --- | | One Solution | No Solution | Many Solutions | | 3x + 2y = 6  6x + 4y = 12 | 3x + 2y =4  2x + 3y = 7 | 2x + 5y = 8  2x + 5y = 3 | |
|  |  |
|  |  |
| **23.** | Which is an equation of the line that passes through the point (6, –2) and is perpendicular to 3*x* + 2*y* = 6? |
|  |
|  | |  |  | | --- | --- | | **A.** | /files/assess_files/261ad8c0-3980-44a6-be41-01c437d6ec2d/a25f2034-7545-472b-9250-3970cfd45822.png | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | /files/assess_files/344099cb-747e-4085-bc45-aed8990796d7/5c9fc66a-d821-439b-be3b-ddb1b943ca5d.png | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | /files/assess_files/350cc370-858f-4a45-9d50-a52cbae19345/89ee440d-de17-4de5-b250-032d6f6ddfa4.png | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | /files/assess_files/1b09a278-11d3-4354-bd11-92b3cdee1ae5/85990163-a738-46ab-9d5f-e4fdb07857a3.png | |
|  |  |
|  |  |
| **24.** | What is the explicit formula for the geometric sequence 3, 6, 12, 24, 48...? |
|  |
|  | |  |  | | --- | --- | | **A.** | /files/assess_files/6e70ffe8-c9b7-455c-b1c4-c4ba8de4c34a/312ea944-ec9e-4416-a916-95df99f4503f.png | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | /files/assess_files/e75b5061-4402-40dc-a2be-6b58ed2dad70/648523ad-806a-46a7-87f0-bcc6a8abc5af.png | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | /files/assess_files/baf4577d-7685-4d97-9287-3aa4edbe4213/6276d564-fe4b-4902-848f-f4721a04cffe.png | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | /files/assess_files/4437eb1f-39cd-439e-aa6a-1bc54d99982d/574b250f-ce89-408f-86a1-f9567bc1ac6c.png | |
|  |  |
|  |  |
| **25.** | Terry is given two salary options by his employer.   ● The first option is a starting salary of $20,000 that increases by $500 each year he is with the company.   * The second option is a starting salary of $20,000 that increases by 2.2% each year he is with the company.   How many years will Terry have to be with the company for the salary with the second option to be greater than the salary with the first option? |
|  |
|  | |  |  | | --- | --- | | **A.** | 11 | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | 12 | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | 13 | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | 14 | |
|  |  |
| **26.** | Karen and Mary are saving money. Karen has $1,035 and deposits an additional $125 a week. Mary has $2,250 and deposits an additional $100 a week. What is the minimum number of weeks it will take Karen and Mary to have a total of more than $5,000 in savings? |
|  |
|  | |  |  | | --- | --- | | **A.** | 7 weeks | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | 8 weeks | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | 13 weeks | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | 17 weeks | |
|  |  |
|  |  |
| **27.** | Francis bought two dresses and one pair of shoes for $70.50, before tax. The shoes cost $15.00 more than one dress. How much did the pair of shoes cost? |
|  |
|  | |  |  | | --- | --- | | **A.** | $18.50 | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | $28.50 | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | $33.50 | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | $38.50 | |
|  |  |
|  |  |
| **28.** | Which scenario is ***best*** modeled by a linear function? |
|  |
|  | |  |  | | --- | --- | | **A.** | the height of a rocket *x* seconds after it is launched from a 20-foot tall platform | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | the amount of a radioactive element that decreases by half every *x* 10-year periods | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | the total population of a town that has changed by 2% every *x* years | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | the total price paid for *x* shirts that are on sale for half off | |
|  |  |
|  |  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **29.** | In the table below, Sally recorded the height of a plant after different amounts of time.   |  |  | | --- | --- | | **Day** | **Height**   (inches) | | 3 | 2 | | 7 | 5 | | 15 | 10 | | 20 | 18 | | 35 | 36 |   Between which two days did the plant show the greatest rate of change in growth per day? |
|  |
|  | |  |  | | --- | --- | | **A.** | 3 and 20 | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | 15 and 20 | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | 15 and 35 | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | 20 and 35 | |
|  |  |
| **30.** | The length of a rectangle is 3 more than 3 times its width. The perimeter of the rectangle is 174 inches. What is the length of the rectangle? |
|  |
|  | |  |  | | --- | --- | | **A.** | 21 inches | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | 43 inches | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | 57 inches | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | 66 inches | |
|  |  |
|  |  |
| **31.** | Numeric Response: The function s(n) = 2n - 5 represents the alue of the nth term in a sequence. What is the sum of the 1st and 6th terms of the sequence? |
|  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **32.** | The table below shows the amount of gas remaining in Aaron’s car after he drove different distances.   |  |  | | --- | --- | | **Miles Driven** (*x*) | **Gallons of Gas**   **Remaining** (*y*) | | 0 | 14.00 | | 42 | 12.50 | | 77 | 11.25 | | 112 | 10.00 | | 182 | 7.50 | | 245 | 5.25 | | 308 | 3.00 |   Which ***best*** describes the slope of the line of best fit for the data? |
|  |
|  | |  |  | | --- | --- | | **A.** | For every mile driven, the car uses about 14 gallons of gasoline. | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | For every mile driven, the car uses about 28 gallons of gasoline. | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | For every 14 miles driven, the car uses about 1 gallon of gasoline. | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | For every 28 miles driven, the car uses about 1 gallon of gasoline. | |
|  |  |
|  |  |

|  |  |
| --- | --- |
| **33.** | Which statement is true about the equation /files/assess_files/0efb4c03-a457-439d-a7eb-9ca9dcc0551d/images/f843aa4ff80b08b6cae42896c4786f4d.png given /files/assess_files/0efb4c03-a457-439d-a7eb-9ca9dcc0551d/images/2b4479d5a171a5f64a2cb071e682d868.pngand /files/assess_files/0efb4c03-a457-439d-a7eb-9ca9dcc0551d/images/6b89fdeb53671f942bed1723b8d8c01a.png |
|  |
|  | |  |  | | --- | --- | | **A.** | It has two solutions at /files/assess_files/b70cb2fb-69ef-4301-9b28-e5e4047816ed/images/9b2e19d886c6914eecd63a0dc927d094.png | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | It has two solutions at /files/assess_files/d8bd218d-06bc-4b65-beac-9ce919c7c316/images/1444d71f7a66fe13eed250dd4a265f2f.png | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | It has four solutions at /files/assess_files/3462b817-6dbf-481e-aaf2-537cd20e955b/images/0ad2a1bb5aac1a489566e81abe5991f0.png. | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | It has four solutions at /files/assess_files/0d4c7c1a-b216-4233-bd92-17224a8a4973/images/e942167b72ca898f0705cafdf9875774.png | |
|  |  |
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| --- | --- | --- | --- |
| **34.** | The weights, in pounds, of some male and female dogs at an animal shelter are listed below.   Male: {6, 12, 15, 25, 46, 75, 10, 82, 103}  Female: {4, 11, 14, 20, 44, 65, 8, 76, 96}  Which statement is true? | | |
|  |
|  | |  |  | | --- | --- | | **A.** | The standard deviation of male dogs is greater than the standard deviation of female dogs by approximately 4.2. | | | |
|  |  | | |
|  | |  |  | | --- | --- | | **B.** | The standard deviation of female dogs is greater than the standard deviation of male dogs by approximately 4.2. | | | |
|  |  | | |
|  | |  |  | | --- | --- | | **C.** | The standard deviation of female dogs is greater than the standard deviation of male dogs by approximately 2.5. | | | |
|  |  | | |
|  | |  |  | | --- | --- | | **D.** | The standard deviation of male dogs is greater than the standard deviation of female dogs by approximately 2.5. | | | |
|  |  | | |
|  |  | | |
| **35.** | The table below shows the number of hours 4 waiters at a restaurant worked during a week and the amount in tips each waiter earned.   |  |  |  | | --- | --- | --- | | **Name** | **Hours Worked** | **Tips Earned** | | Paul | 24 | $ 190 | | Victor | 28 | $ 224 | | Colin | 29 | $ 230 | | Zachary | 26 | $ 204 |   Which waiter earned tips closest to the amount predicted by the line of best fit for the data? | | |
|  |
|  | |  |  | | --- | --- | | **A.** | Paul | | | |
|  |  | | |
|  | |  |  | | --- | --- | | **B.** | Victor | | | |
|  |  | | |
|  | |  |  | | --- | --- | | **C.** | Colin | | | |
|  |  | | |
|  | |  |  | | --- | --- | | **D.** | Zachary | | | |
|  |  | | |
|  |  | | |
| **36.** | The numbers of calories in 5 sandwiches on a restaurant’s menu are shown below.  505, 504, 495, 482, 499  The restaurant plans to add a sixth sandwich to the menu that contains 805 calories. What effect will the new sandwich have on the data set? | | |
|  |
|  | |  |  | | --- | --- | | **A.** | The median will increase by about 51. | | | |
|  |  | | |
|  | |  |  | | --- | --- | | **B.** | The median will decrease by about 3. | | | |
|  |  | | |
|  | |  |  | | --- | --- | | **C.** | The mean will increase by about 51. | | | |
|  |  | | |
|  | |  |  | | --- | --- | | **D.** | The mean will decrease by about 3. | | | |
|  |  | | |
|  |  | | |
| **37.** | | The table shows the height of a plant over several years.   |  |  | | --- | --- | | **Plant Age**   (years) | **Plant Height**   (in.) | | 1 | 12 | | 2 | 22 | | 3 | 36 | | 4 | 40 |   Using a linear model, ***approximately*** how many years will it take the plant to first reach 63 in.? |
|  | |
|  | | |  |  | | --- | --- | | **A.** | 5 | |
|  | |  |
|  | | |  |  | | --- | --- | | **B.** | 6 | |
|  | |  |
|  | | |  |  | | --- | --- | | **C.** | 7 | |
|  | |  |
|  | | |  |  | | --- | --- | | **D.** | 10 | |
|  | |  |
| **38.** | | The number of people attending a safety class and a certification class over several weeks is shown below.   Safety Class: {22, 30, 10, 23, 20, 27, 28}  Certification Class: {10, 22, 23, 18, 21, 22, 28}      Which class had a greater standard deviation and by how much greater? | | |
|  | |
|  | | |  |  | | --- | --- | | **A.** | Safety Class, by about 1.2 | | | |
|  | |  | | |
|  | | |  |  | | --- | --- | | **B.** | Certification Class, by about 1.2 | | | |
|  | |  | | |
|  | | |  |  | | --- | --- | | **C.** | Safety Class, by about 6.7 | | | |
|  | |  | | |
|  | | |  |  | | --- | --- | | **D.** | Certification Class, by about 6.7 | | | |
|  | |  | | |
|  | |  | | |
| **39.** | | The table below shows the height and shoe size of six girls on a high school volleyball team.   |  |  | | --- | --- | | **Height** (inches) | **Shoe Size** | | 61.5 | 6 | | 62 | 6.5 | | 64 | 7 | | 65 | 7.5 | | 67.5 | 8 | | 69 | 8 |   Which is the ***best*** interpretation of the correlation coefficient of the line of best fit for the data? | | |
|  | |
|  | | |  |  | | --- | --- | | **A.** | There is a weak positive correlation showing that as height increases, shoe size increases. | | | |
|  | |  | | |
|  | | |  |  | | --- | --- | | **B.** | There is a weak negative correlation showing that as height increases, shoe size decreases. | | | |
|  | |  | | |
|  | | |  |  | | --- | --- | | **C.** | There is a strong positive correlation showing that as height increases, shoe size increases. | | | |
|  | |  | | |
|  | | |  |  | | --- | --- | | **D.** | There is a strong negative correlation showing that as height increases, shoe size decreases. | | | |
|  | |  | | |
|  | |  | | |
| **40.** | | Four data sets are shown below.   Set 1: {10, 19, 38, 50, 51}  Set 2: {5, 21, 26, 39, 51}  Set 3: {9, 38, 50, 50, 51}  Set 4: {5, 28, 28, 28, 51}  Which data set has the largest standard deviation? | | |
|  | |
|  | | |  |  | | --- | --- | | **A.** | Set 1 **B**. Set 2 **C.** Set 3 **D.** Set 4 | | | |
|  | |  | | |
| **41.** | | The mean age of five people in a room is 30 years old. One of the people, whose age is 50 years old, leaves the room. What is the mean age of the remaining four people in the room? | | |
|  | |
|  | | |  |  | | --- | --- | | **A.** | 24 **B**. 25 **C.** 26 **D.** 30 | | | |
|  | |  | | |
|  | |  | | |
| **42.** | | Which expression is equivalent to the perimeter of the triangle shown below?  /files/assess_files/2ed72b73-dee9-4018-aad3-0b5e20c1f34f/images/37019.png | | |
|  | |
|  | | |  |  | | --- | --- | | **A.** | 15*x* + 7 | | | |
|  | |  | | |
|  | | |  |  | | --- | --- | | **B.** | 19*x* + 5 | | | |
|  | |  | | |
|  | | |  |  | | --- | --- | | **C.** | 12*x*2 – 2*x* – 2 | | | |
|  | |  | | |
|  | | |  |  | | --- | --- | | **D.** | 24*x*2 – 4*x* – 4 | | | |
|  | |  | | |
|  | |  | | |

|  |  |
| --- | --- |
| **43.** | **What is the solution set of the equation** /files/assess_files/bd87a5e5-7ba9-43d9-8f33-752ab859483e/fdcf78df-4f61-4840-bfef-84d0c64a913e.png**?** |
|  |
|  | |  |  | | --- | --- | | **A.** | /files/assess_files/397ac5c5-fb93-48ce-9f4d-7682e37c17e3/dc18897c-971d-4798-a5f8-c57c0bce86dd.png | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | /files/assess_files/f4d395cd-7f8a-4294-af22-da8077b4f96a/833f14c1-63b1-492f-83a8-8d9a1c1dc5db.png | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | /files/assess_files/944a0791-c2fd-496f-99c6-21aaa31c9211/b62f8484-7448-48b4-bfd8-60e86cddb83d.png | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | /files/assess_files/3f6ff020-acbf-47bd-a9d2-9f1a0bd85352/78e75d26-836a-4c52-a067-ab1b20ca3694.png | |
|  |  |
| **44.** | A rectangular room’s length is three more than four times its width, *w*. An adjoining room has an area of 144 ft2. Which function, *f*(*w*), represents the total area of the two rooms? |
|  |
|  | |  |  | | --- | --- | | **A.** | *f*(*w*) = 4*w* + 147 | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | *f*(*w*) = 7*w* + 144 | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | *f*(*w*) = 4*w*2 + 3*w* + 12 | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | *f*(*w*) = 4*w*2 + 3*w* + 144 | |
|  |  |
| **45.** | Which line passes through the point (6, 8) and is perpendicular to the line *x* + 3*y* = 9? |
|  |
|  | |  |  | | --- | --- | | **A.** | *x* + 3*y* = 30 | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | *x* – 3*y* = –18 | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | 3*x* + *y* = 26 | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | 3*x* – *y* = 10 | |
|  |  |
| **46.** | Two functions are shown below.  *f*(*x*) = 2*x* – 6  *g*(*x*) = –*x* + 9  What is the value of *x* when *f*(*x*) = *g*(*x*)? |
|  |
|  | |  |  | | --- | --- | | **A.** | 3 **B.** 4 **C.** 5 **D.** 9 | |
| **47.** | What is the ***approximate*** value of *f*(7.1) for the function *f*(*x*) = 4.12*x* + 35.89? |
|  |
|  | |  |  | | --- | --- | | **A.** | 64.0 | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | 64.5 | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | 64.7 | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | 65.1 | |
|  |  |
| **48.** | The vertices of a rectangle are located at (3, 2), (11, 6), (9, 10), and (1, 6). What is the area of the rectangle? |
|  |
|  | |  |  | | --- | --- | | **A.** | 20 square units | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | 27 square units | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | 40 square units | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | 160 square units | |
|  |  |
| **49.** | Which scenario is ***best*** modeled by a linear function? |
|  |
|  | |  |  | | --- | --- | | **A.** | the height of a rocket *x* seconds after it is launched from a 20-foot tall platform | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | the amount of a radioactive element that decreases by half every *x* 10-year periods | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | the total population of a town that has changed by 2% every *x* years | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | the total price paid for *x* shirts that are on sale for half off | |
|  |  |
|  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **50.** | How far is the *y*-intercept of the function that fits the values in the table below, from the *y*-intercept of the function graphed below?   |  |  | | --- | --- | | ***x*** | ***y*** | | 3 | 1 | | 5 | 5 | | 7 | 9 | | 9 | 13 | | 11 | 17 |   /files/assess_files/3380c73e-3f02-414a-9cf7-96992e85f333/images/26609.png |
|  |
|  | |  |  | | --- | --- | | **A.** | 1 unit **B.** 2 units **C.** 5 units **D.** 9 units | |
|  |  |
|  |  |
| **51.** | The length of a rectangle is 5 more than its width. The width of the rectangle will be doubled and the length will remain the same. Which equation models the area, *A*, of the new rectangle in terms of its width, *w*? |
|  |
|  | |  |  | | --- | --- | | **A.** | *A* = 2*w* +5 | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | *A* = 4*w* +10 | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | *A* = 2*w*2 + 10*w* | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | *A* = 2*w*2 + 20*w* | |
|  |  |
|  |  |
| **52.** | In the coordinate plane, point *J* is located at (7, 11). The point at (–6, –2) is the midpoint of line segment *JK*. What are the coordinates of point *K*? |
|  |
|  | |  |  | | --- | --- | | **A.** | (0.5, 10.5) | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | (10.5, 0.5) | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | (–15, –19) | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | (–19, –15) | |
|  |  |
|  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **53.** | A linear function is shown in the table below.   |  |  | | --- | --- | | ***x*** | ***g*(*x*)** | | –4 | –7 | | –3 | –4 | | –2 | –1 | | –1 | 2 |   Which statement is true? |
|  |
|  | |  |  | | --- | --- | | **A.** | The *y*-intercept of the function is 3. | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | The *x*-intercept of the function is /files/assess_files/4efff522-bc37-4f98-bc89-7aabeed41693/17e99f05-09fd-4cfc-a118-a2285afacfb9.png. | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | The slope of the function is negative. | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | The slope of the function is positive. | |
|  |  |
|  |  |