|  |  |
| --- | --- |
| **functions features [2649055]** | |
| Student |  |
| Class |  |
| Date |  |

|  |  |
| --- | --- |
| **1.** | **A taxi cab charges an initial fee of $2.50, a rate of $0.65 per mile for the first 20 miles, and then a rate of $0.45 per mile for distances greater than 20 miles. Which of the following equations shows the cost *y,* in dollars, for a cab ride that is *x* miles long, if the total distance is greater than 20 miles?** |
|  |
|  | |  |  | | --- | --- | | **A.** | /files/assess_files/dc1fd255-1329-42c3-b7c7-1d102f347239/cc037073-3655-4fc1-ae8f-ba0cbfbdde20.png | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | /files/assess_files/ea3f8473-07b4-4ebf-855e-c85d1f35b732/0bbac667-dc51-417f-b7b5-36acb8669f7f.png | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | /files/assess_files/7c19af72-0bda-465a-a1a6-98fce3000665/259bc267-51d7-4acb-bf59-75e7e0b0a386.png | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | /files/assess_files/887ee31d-481a-48ba-9245-80956e848f84/62385173-df85-4b76-ba68-57e81d81d371.png | |
|  |  |
|  |  |

|  |  |  |
| --- | --- | --- |
| **2.** | **The first term of the arithmetic sequence below is equal to 2.**   |  | | --- | | **2, 7, 12, 17, 22, 27, . . .** |     **Which term of the sequence is equal to 137?** |
|  |
|  | |  |  | | --- | --- | | **A.** | 28th | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | 27th | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | 26th | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | 25th | |
|  |  |
|  |  |

|  |  |
| --- | --- |
| **3.** | Which function has the largest value for *f*(–3)? |
|  |
|  | |  |  | | --- | --- | | **A.** | *f*(*x*) = 2*x –* 5 | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | *f*(*x*) = 2 – 4*x* | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | *f*(*x*) = 6 – 3*x* | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | *f*(*x*) = 2*x* + 10 | |
|  |  |
|  |  |

|  |  |
| --- | --- |
| **4.** | Emma and Kyle combine their earnings to pay their bills. Emma’s earnings can be modeled by the equation *E*(*x*) = 22.75*x* + 74, where *x* is the number of hours worked in a week. Kyle’s earnings are modeled by the equation *K*(*x*) = 17.85*x* + 127, where *x* is the number of hours worked in a week. Which function models their combined earnings, *C*(*x*), if they each work the same number of hours in a week? |
|  |
|  | |  |  | | --- | --- | | **A.** | *C*(*x*) = 241.60*x* | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | *C*(*x*) = 40.60*x* + 201 | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | *C*(*x*) = 40.60*x* + 53 | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | *C*(*x*) = 4.90*x* – 53 | |
|  |  |
|  |  |

|  |  |
| --- | --- |
| **5.** | **Which coordinate pair represents the *x-*intercept of the graph of the equation** /files/assess_files/75b28776-a633-4229-b4ff-02031b2c5a4b/f8ce0d27-5cfd-4c25-a4af-10ce95a8eb0a.png |
|  |
|  | |  |  | | --- | --- | | **A.** | /files/assess_files/0ec3fa34-37d8-43a2-b142-bc551736c1f6/2630fbf5-b8bc-424a-a42f-614744644eef.png | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | /files/assess_files/c404bca7-f9e8-49da-bd50-81b261923c79/f83566ec-74b8-412b-be94-b3b6df1c2ff5.png | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | /files/assess_files/c4d3bbbf-4b76-48a0-a4d8-4711fff1920e/847aa09e-3bd3-44ca-9b76-f99fc6f2e86c.png | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | /files/assess_files/a16cb010-ebd4-4e29-999f-7d947e21df3e/0042b17f-c7d9-4f2d-ab57-d5bcc3df170a.png | |
|  |  |
|  |  |

|  |  |
| --- | --- |
| **6.** | Which is an equation of the function graphed below?  /files/assess_files/e250eddc-7f5b-41e2-9753-9eea8bd52cca/images/34582.png |
|  |
|  | |  |  | | --- | --- | | **A.** | f(x)=−2(13)x | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | f(x)=2(13)x | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | f(x)=−13(2)x−2 | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | f(x)=13(2)x−2 | |
|  |  |
|  |  |

|  |  |
| --- | --- |
| **7.** | **Which graph BEST represents the equation** /files/assess_files/8e3ced1d-a357-49cf-8f21-612fcd9f06cf/48f56b35-05a1-4a2f-9b9f-e4eb9670ec0e.png |
|  |
|  | |  |  | | --- | --- | | **A.** | /files/assess_files/97b1dd21-b66e-405a-880f-160932734a0b/image/141765.jpg | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | /files/assess_files/d88fd79d-5196-451d-a0f0-675f224cb4bf/image/141768.jpg | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | /files/assess_files/dceb3cdb-530d-4006-94d4-486d9c047887/image/141770.jpg | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | /files/assess_files/723a4740-9567-43a5-af7b-73854e8db726/image/141772.jpg | |
|  |  |
|  |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **8.** | **According to package information, frozen vegetables will stay fresh for different amounts of time if stored at different temperatures as shown in the chart below.**   |  |  | | --- | --- | | **Number of** **Months** | **Temperature** **(°C)** | | 0.4 | 5 | | 2 | 2 | | 12 | – 18 |     **Which graph shows the relationship between the number of months and the temperature?** |
|  |
|  | |  |  | | --- | --- | | **A.** | /files/assess_files/1a47b97b-9488-4d4f-adb3-953e13d13a2d/image/149245.jpg | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | /files/assess_files/4ca2f6f6-bfba-4a84-82b2-7b19f9f186bd/image/149246.jpg | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | /files/assess_files/8fd31861-5917-49a0-aaac-876ffdf34a20/image/149249.jpg | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | /files/assess_files/f69ece82-6102-4fe6-817b-4ffb614f10b4/image/149250.jpg | |
|  |  |
|  |  |
| **9.** | The table below shows the weight of a truck in pounds, *w*, as it increases for each crate of fruit, *f*, loaded onto it.   |  |  | | --- | --- | | **Number of Crates of Fruit Loaded on Truck**  (*f*) | **Total Weight of Truck** (*w*) | | 6 | 10,680 | | 10 | 12,200 | | 13 | 13,340 | | 16 | 14,480 | | 21 | 16,380 |   What is the weight of the truck before any fruit is loaded onto it? |
|  |
|  | |  |  | | --- | --- | | **A.** | 1,780 pounds | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | 8,400 pounds | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | 8,780 pounds | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | 10,680 pounds | |
|  |  |
|  |  |
| **10.** | **The following equation is used to predict the cost, *c*, in dollars, to produce *g* units of some item.**  /files/assess_files/9e37600c-ef66-4905-98ed-9ad11764a5f6/0dad31a8-b21c-41aa-ba0c-bcd66db10a21.png  **Which is a reasonable range for the cost to produce less than 100 items?** |
|  |
|  | |  |  | | --- | --- | | **A.** | /files/assess_files/63bd2911-9c10-4238-9fcb-9d459426c737/23c7b57e-94f9-4388-8af3-9b14eb9193e1.png | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | /files/assess_files/75906c81-1615-4603-aa26-5f4a949369b7/0a9512ce-cc18-4f35-866a-f482db927c0c.png | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | /files/assess_files/8092f138-2f56-48bf-8f89-2a83b7d267f2/4d6b3408-75e1-415e-bd17-807afad072c9.png | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | /files/assess_files/856d27f8-a1dc-4fa6-99f3-54e0f912fec3/ddfe80ea-da4f-408c-8326-25fe546a3c9b.png | |
|  |  |
|  |  |

|  |  |
| --- | --- |
| **11.** | **The weight, in pounds, of a baby in the first six months of life can be modeled by the function** /files/assess_files/6d6eaf06-a16f-4d84-a301-33ee46fb8592/4e44da70-8222-416f-894a-05a10cabe218.png**, where *x* is the age of the baby in months. According to this model, what is the weight, in pounds, of a baby at age 5 months?** |
|  |
|  | |  |  | | --- | --- | | **A.** | 8.5 | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | 12.0 | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | 13.5 | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | 14.5 | |
|  |  |
|  |  |

|  |  |
| --- | --- |
| **12.** | **A line segment is drawn in the coordinate plane. What is its domain and range?**  /files/assess_files/eba6aeaf-bad8-47dd-8f12-f05fdb44e087/image/182751.jpg |
|  |
|  | |  |  | | --- | --- | | **A.** | /files/assess_files/6ce42c9a-e31e-40f9-8b1e-0f70d4bcc351/bdb18a3b-555c-4b58-960b-1adbc3814b51.png and /files/assess_files/6ce42c9a-e31e-40f9-8b1e-0f70d4bcc351/183e69be-bd75-49da-bee9-343867f69862.png | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | /files/assess_files/605e875f-0fa1-419a-8ad3-baff75aa43be/725e48b8-edf0-4dd2-a0ca-6602378a7dcf.png and /files/assess_files/605e875f-0fa1-419a-8ad3-baff75aa43be/de4793c6-2171-45a3-8b1f-3ae91f9e7957.png | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | /files/assess_files/2d67d442-3012-42ec-863a-fde1ac4fd77c/a7d28006-eb32-446d-b779-50022a7ed242.png and /files/assess_files/2d67d442-3012-42ec-863a-fde1ac4fd77c/2f687d30-f375-4fb9-803e-24aa6b6cac34.png | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | /files/assess_files/e10fd9f7-89fb-4795-9318-9f104f4ba897/a08d78c8-4ba9-4aa6-ac45-5376709e570e.png and /files/assess_files/e10fd9f7-89fb-4795-9318-9f104f4ba897/a6af6457-837e-4a27-b471-07d34c3fd292.png | |
|  |  |
|  |  |
| **13.** | **A sequence is defined below.**  /files/assess_files/882cf981-110e-4684-b845-18c9fa70561c/dc424a59-13c5-427f-bbb3-5852e42069af.png, /files/assess_files/882cf981-110e-4684-b845-18c9fa70561c/2a1eed78-a779-442d-9dcc-8216fa34798b.png  **What is the 6th term of this sequence?** |
|  |
|  | |  |  | | --- | --- | | **A.** | 9 | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | 10 | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | 25 | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | 29 | |
|  |  |
|  |  |
| **14.** | The cost to rent a van can be modeled by the function, *V* = 45 + 0.10*m*, where *V* is the cost to rent the van and *m* is the total number of miles the van is driven. What does the *y*-intercept represent in the context of the problem? |
|  |
|  | |  |  | | --- | --- | | **A.** | the total cost to rent the van | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | the cost per mile to rent the van | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | the total miles the van was driven | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | the initial cost to rent the van | |
|  |  |
|  |  |
| **15.** | In 1980, researchers found there were 100 bears in an area. The researchers determined that each year the bear population increased by 6.2%. What does the 6.2 represent? |
|  |
|  | |  |  | | --- | --- | | **A.** | the average number of bears the population increases by each year | |
|  |  |
|  | |  |  | | --- | --- | | **B.** | the average number of bears the population decreases by each year | |
|  |  |
|  | |  |  | | --- | --- | | **C.** | the growth factor for the bear population | |
|  |  |
|  | |  |  | | --- | --- | | **D.** | the decay factor for the bear population | |
|  |  |
|  |  |