TEST NAME: **NAMSIM11314F-LE.2**
TEST ID: **132226**
GRADE: **09**
SUBJECT: **Mathematics**
TEST CATEGORY: **My Classroom**

Student:

Class:

Date:

1. Which is an equation of the linear function that passes through the points (3, 7) and (8, ¯13)?

A. $y = 4x - 5$

B. $y = \frac{1}{4}x + \frac{25}{4}$

C. $y = \frac{-1}{4}x + \frac{19}{4}$

D. $y = -4x + 19$

2. Maria began the school year with $200 in her school lunch account.

- The amount of money in the account has decreased linearly.
- After 3 months, she had $155 in her account.
- After 5 months, she had $125 in her account.

Which function models the amount of money that Maria has in her account at the end of *n* months?

A. $f(n) = 200 - 30n$

B. $f(n) = 200 - 15n$

C. $f(n) = 30n - 200$

D. $f(n) = 15n - 200$

3. Which choice is an equation of the function that passes through the points listed in the table below?

x	y
0	9
1	11
2	17
3	35

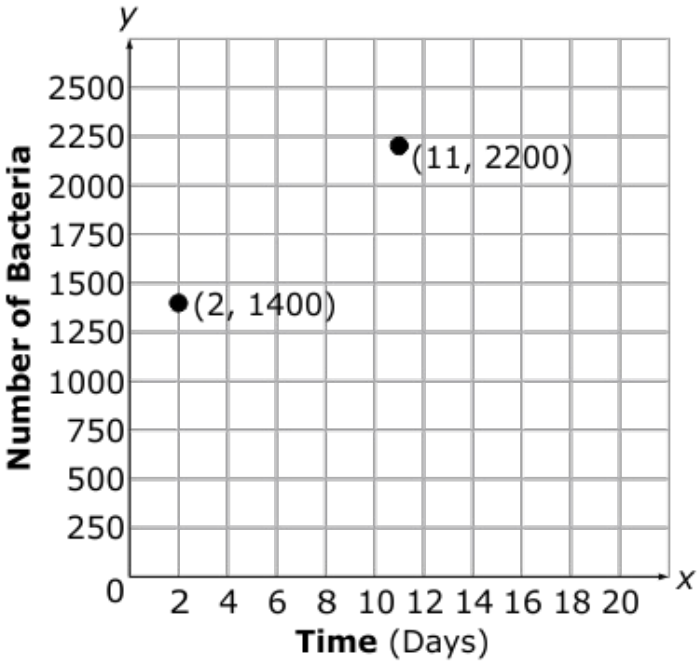
A. $y = x + 9$

B. $y = 2x + 9$

C. $y = 2^x + 8$

D. $y = 3^x + 8$

4. The graph below shows the number of bacteria in a petri dish over a period of time.



Which exponential function could be used to model the number of bacteria after $x$days?

A. $y = 1.5(1{,}266)^x$

B. $y = 1{,}266(1.5)^x$

C. $y = 1.05(1{,}266)^x$

D. $y = 1{,}266(1.05)^x$

5. Which choice is an equation of the linear function that passes through the points (2, 3) and (5, 9)?

A. $y = 2x + 1$

B. $y = 2x - 1$

C. $y = 3x + 1$

D. $y = 3x - 1$

6. Which is an equation of the linear function that passes through the points ($^{-}3$, $^{-}1$) and (4, $^{-}2$)?

A. $y = \frac{^{-}1}{7}x + \frac{17}{7}$

B. $y = \frac{^{-}1}{7}x + \frac{10}{7}$

C. $y = \frac{^{-}1}{7}x - \frac{17}{7}$

D. $y = \frac{^{-}1}{7}x - \frac{10}{7}$

7. Miesha is saving the same amount of money each week. After 2 weeks, she saves $85. After 4 weeks, she saves $135. Which equation models the amount of money Miesha will have saved, *y*, after *x* weeks?

A. $y = 25x + 35$

B. $y = 25x + 85$

C. $y = 50x - 15$

D. $y = 50x + 85$

8. Which choice is an equation of the function that passes through the points listed in the table below?

x	***y***
2	4
4	16
6	64
8	256

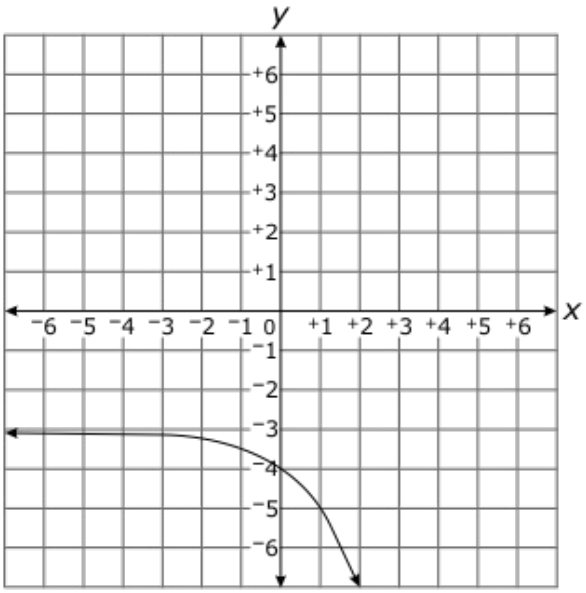
A. $y = 2x$

B. $y = 6x - 8$

C. $y = 2^x$

D. $y = 4^x$

9. Which function represents the graph below?



A. $y = {}^{-}2^x - 3$

B. $y = {}^{-}2^x + 3$

C. $y = 2^x - 3$

D. $y = 2^x + 3$

10. The graph of a linear function passes through the points (2,3) and (5,9). Which is an equation of the function?

A. $f(x) = 2x + 1$

B. $f(x) = 2x - 1$

C. $f(x) = 3x - 1$

D. $f(x) = 3x + 1$

11. A cupcake shop had $55,000 in sales in the year 1990. In the year 2000, the shop had $105,000 in sales. Assuming a linear relationship, which function models the amount of sales the shop had x years after 1990?

A. $f(x) = 5{,}000x + 55{,}000$

B. $f(x) = 5{,}000x + 105{,}000$

C. $f(x) = 55{,}000x + 105{,}000$

D. $f(x) = 105{,}000x + 55{,}000$

12. Juan invested $1,000. The value of the investment at the end of different years is shown in the table below.

Year (x)	**Value** (y)
0	$1,000.00
1	$1,120.00
2	$1,254.40
3	$1,404.93
> 4	$1,573.52

Which function ***best*** represents the data?

A. $y = 1{,}000(1.12)^x$

B. $y = 1{,}000(0.12)^x$

C. $y = 1{,}000 + 1.12x$

D. $y = 1{,}000 + 0.12x$

13. Which choice is an equation of the linear function that passes through the points (1, 3) and ($^{-}$2, 3)?

A. $y = 1$

B. $y = 3$

C. $y = 2x + 3$

D. $y = {}^{-}2x + 3$

14. In 1990, a music store sold 250 CDs per day. In 1995, they sold 175 CDs per day. Assuming a linear relationship, how many CDs did the store sell per day in 2000?

A. 130

B. 115

C. 100

D. 85

15. Isaac rented a movie but forgot to return it on time. The table below shows the total amount of money that Isaac owed after different numbers of days.

Number of Days (x)	**Total Owed** (y)
1	\$3.00
2	\$4.25
3	\$5.50
4	\$6.75

Which function models the amount of money Isaac owed after $x$days?

A. $y = 1.25x + 1.75$

B. $y = 1.25x + 3$

C. $y = 1.25(3)^x$

D. $y = 3(1.25)^x$

16. Which is an equation of the function that passes through the points listed in the table below?

x	***y***
1	1
2	> 13
3	61
4	253

A. $y = \left(\frac{1}{2}\right)^x + \frac{1}{2}$

B. $y = 4^x - 3$

C. $y = 4x - 3$

D. $y = 7x - 1$

17. Which exponential function's graph passes through the points shown in the table below?

x	***y***
1	0.25
3	0.0625

A. $y = 2\left(\frac{1}{8}\right)^x$

B. $y = \left(\frac{1}{4}\right)^x$

C. $y = \frac{1}{2}\left(\frac{1}{2}\right)^x$

D. $y = \frac{1}{8}(2)^x$

18. The value of a car and the time since its purchase is shown in the table below.

Years Since Purchased (t)	**Value of Car** (V)
2	24,463
4	23,018
5	22,327
8	20,377

Which function ***best*** models the relationship between time and value of the car?

A. $V(t) = 24{,}463(0.97)^t$

B. $V(t) = 24{,}463 - 0.97t$

C. $V(t) = 26{,}000(0.97)^t$

D. $V(t) = 26{,}000 - 0.97t$

19. Which is an equation of the exponential function that passes through the points shown in the table below?

x	***y***
3	3
4	9
5	27
6	81
7	243

A. $y = 3^x$

B. $y = 3^x - 3$

C. $y = \frac{1}{9}(3)^x$

D. $y = \frac{1}{3}(3)^x$

20. A 6-pound bag of peanuts costs $7.50, and a 10-pound bag of peanuts costs $12.50. Assuming the cost of peanuts follows a linear trend, how much would a 3-pound bag of peanuts cost?

A. $1.25

B. $3.75

C. $4.25

D. $5.00

21. The table below shows the amount of bacteria in a lab dish after different amounts of time.

Time (hours) (x)	**Bacteria** (y)
1	150
2	450
3	1,350
4	4,050

Which function models the population of bacteria?

A. $y = 3x + 50$

B. $y = 3x + 150$

C. $y = 50(3)^x$

D. $y = 150(3)^x$

22. The number of mold spores on a piece of bread after different amounts of time are listed in the table below.

Day	Mold Spores
1	200
2	400
3	800
4	1,600

Which function models the number of mold spores on the bread after *x*days?

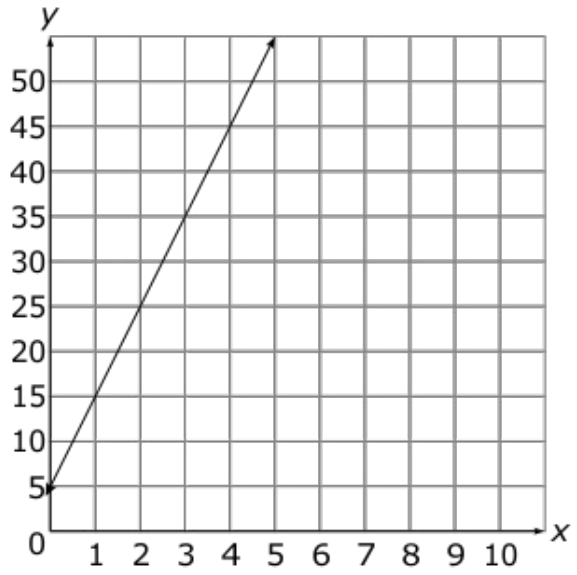
A. $y = 100(2x)$

B. $y = 2x + 100$

C. $y = 2(100)^x$

D. $y = 100(2)^x$

23. Which choice is a correct equation for the graph shown below?



A. $y = 2x + 20$

B. $y = 3x + 1$

C. $y = 10x + 5$

D. $y = 15x + 35$

24. Which function fits the values in the table below?

x	$f(x)$
0	50
1	150
2	450
3	1,350

A. $f(x) = 50^x$

B. $f(x) = 50(3)^x$

C. $f(x) = 3^x$

D. $f(x) = 3(50)^x$

25. Which is an equation of the linear function that passes through the points $(0, {}^{-}2)$ and $\left(2, \frac{{}^{-}2}{3}\right)$?

A. $6x - 3y = 6$

B. $2x - y = 6$

C. $2x - 3y = 6$

D. $2x - 3y = 2$