TEST NAME: **NAMSIM11314S-ID.7**

TEST ID: **130081**

GRADE: **09**

SUBJECT: **Mathematics**

TEST CATEGORY: **My Classroom**

Student:

Class:

Date:

1. The table below shows the number of calories burned per hour by a person running at different speeds.

Speed (mph)	2	3	4	5	6
Calories Burned	213	345	460	510	675

Using a line of best fit, what does the slope represent?

A. the average number of calories burned per hour as the speed increases by 1 mph

B. the average number of calories burned per hour as the speed decreases by 1 mph

C. the average number of calories burned per hour as the speed remains constant

D. the average number of calories burned per hour if no exercise takes place

2. The table below shows the length of time a plumber takes on a job and the price he charges.

Hours	1	2.5	4.75	6
Cost	$120	$180	$270	$320

What does the *y*-intercept represent?

A. the hourly cost of repairs

B. the total cost of the repair

C. the cost for the plumber to work one hour

D. the cost for the plumber to come to a house

3. The equation, $C = 0.15(x - 200) + 9.95$, represents a cell phone company's monthly charge, C, for a text messaging service, where x represents the number of text messages per month. What is the ***best*** interpretation of the slope?

   A. The company charges $9.95 for each text message over 200 per month.

   B. The company charges $0.15 for each text message over 200 per month.

   C. The initial fee for text messaging is $9.95.

   D. The cost for each text is $0.15.

4. Suppose the total cost of a ride in a taxi can be modeled by the function $T = 5 + 0.85x$, where T is the total cost and x is the total number of miles. What does the slope of the equation represent?

   A. the initial cost of the taxi

   B. the total cost of the trip

   C. the charge for each mile of the trip

   D. the total number of miles for the trip

5. The table below shows the time in minutes and the distance a person ran on different days.

Time (minutes)	50	89	96	114
Distance (miles)	6.5	11	12.25	14.5

   What does the rate of change for this data represent?

   A. An average increase of 0.12 miles in distance for every minute longer a person runs

   B. An average decrease of 0.12 miles in distance for every minute longer a person runs

   C. An average increase of 0.18 miles in distance for every minute longer a person runs

   D. An average decrease of 0.18 miles in distance for every minute longer a person runs

6. The table below shows the number of residents in a neighborhood who received new water meters over several weeks.

Weeks (w)	0	1	2	3	4
Number of Residents (R)	8	15	29	54	102

What is the meaning of the y-intercept of a linear model for the data?

A. the initial number of residents with meters

B. the initial rate at which residents received meters

C. the maximum number of residents that received meters

D. the rate of change in the number of residents that received meters

7. The table below shows the population of a state in different years.

Years since 2005	**Population**
1	8,347,873
2	8,500,104
3	8,640,000
4	8,790,022
5	8,938,124

What is the meaning of the y-intercept of the line of best fit for the data?

A. the total population of the city when it was founded

B. the average increase in population each year

C. the total population increase per year

D. the approximate population in 2005

8. Laurie painted birdhouses. The table below shows the total number of birdhouses she has painted after different amounts of time.

Time (hours)	**Houses Painted**
1	12
2	21
3	33
4	42
5	55

What is the meaning of the slope of the line of best fit for the data?

A. the total number of birdhouses painted

B. the total amount of time spent painting birdhouses

C. the approximate amount of time it takes to paint each birdhouse

D. the approximate number of birdhouses painted each hour

9. The table below shows the amount of water in a bucket after different amounts of time.

Time (minutes)	**Amount of Water** (ml)
1	29.94
2	29.9
3	29.83
4	29.79
5	29.75

What is the meaning of the slope of the line of best fit for the data?

A. The bucket is predicted to lose 0.05 ml of water per minute.

B. The bucket is predicted to lose 5% of its water per minute.

C. The bucket is predicted to gain 0.05 ml of water per minute.

D. The bucket is predicted to gain 5% of its water per minute.

10. The table below shows the size and the selling price of several homes in a housing development.

Size (square feet)	**Selling Price**
2,000	$169,500
2,234	$180,000
2,305	$185,000
2,398	$189,000
2,420	$190,000

What is the meaning of the slope of the line of best fit for the data?

A. the average increase in square feet for each additional dollar in price

B. the average increase in price for each additional square foot

C. the average number of square feet in a house

D. the minimum price of a house

11. A realtor earns a base salary and a commission based on a percentage of the value of the properties sold. The data below show the value of the property sold and the monthly earnings for the realtor.

Value of Property	$102,000	$227,000	$75,200	$52,000
Monthly Earnings	$3,807	$6,930	$3,134	$2,556

Which statement ***most accurately*** describes the *y*-intercept of the line of best fit?

A. The *y*-intercept of 0.025 represents the commission rate.

B. The *y*-intercept of 0.025 represents the base salary.

C. The *y*-intercept of 1,255 represents the commission rate.

D. The *y*-intercept of 1,255 represents the base salary.

12. The table below shows the height of a tree after different amounts of time since it was planted.

Time (months)	**Height** (inches)
0	24
1	27
2	31
3	35
4	40

What is the meaning of the slope of the line of best fit for the data?

A. The tree grew about 4 inches every month.

B. The tree grew about 1 inch every 4 months.

C. The tree grew about 3 inches every month.

D. The tree grew about 1 inch every 3 months.

13. The table below shows the number of miles a car has been driven and the number of times the oil has been changed in the car.

Miles (in thousands)	45	55	65	75	85
Number of oil changes	12	14	15	17	18

Which statement ***best*** represents the meaning of the slope of the line of best fit of the data?

A. The car averaged 1 oil change over 10,000 miles.

B. The car averaged 2 oil changes over 10,000 miles.

C. The car averaged 3 oil changes over 20,000 miles.

D. The car averaged 6 oil changes over 20,000 miles.

14. The table below shows the number of hours 6 different students studied and the students' grades on a midterm exam.

Hours Studied (x)	0.5	2	4	1.5	3	5
Midterm Grade (y)	64	79	92	82	85	95

This data can be best represented by a linear model. What does the y-intercept of this equation represent?

A. The grade of a student who did not study.

B. The grade of a student who studied for one hour.

C. The rate at which a student's grade improved for every half hour studied.

D. The rate at which a student's grade improved for every hour studied.

15. Anna is studying body proportions for a science project. She measured the height and head circumference of 10 people in her class. The results are shown in the table below.

Height (inches)	**Head Circumference** (inches)
60	8.5
67	9.5
68	9.5
62	9.0
71	10.5
70	10.0
61	8.5
70	10.0
65	9.0
66	9.5

What is the meaning of the slope of the line of best fit for the data?

A. For every 1 inch increase in height, there is about a 6 inch increase in head circumference.

B. For every 1 inch increase in head circumference, there is about a 6 inch increase in height.

C. For every 1 inch increase in head circumference, there is about a 1 inch increase in height.

D. For every $\frac{1}{6}$ inch increase in height, there is about a 6 inch increase in head circumference.

16. The table below shows the number of apples an orchard harvested in different years.

Years Since 1985 (x)	**Thousands of Apples Harvested** (y)
5	875
7	1,065
11	1,445
15	1,825
17	2,015

What is the meaning of the y-intercept of the line of best fit for the data?

A. The farm harvested about 95,000 apples each year.

B. The orchard harvested about 95,000 apples in 1985.

C. The orchard harvested about 400,000 apples in 1985.

D. The farm harvested about 400,000 apples the year it opened.

17. The table below shows the charge for different numbers of shirts from an online website. The company charges a cost per shirt and a setup fee per order.

Shirts Ordered (x)	**Total Cost** (y)
100	$345
125	$363
150	$354
175	$339

What does the y-intercept of the equation of the line of best fit for the data represent?

A. the cost per shirt

B. the setup fee

C. the number of shirts ordered

D. the maximum cost of an order

18. The table below shows the number of hours per week six students spend online and their current grades in math.

Hours Online (per week)	12	8	15	25	4	1	9
Current Math Grade	78	82	73	68	90	93	85

Using a line of best fit, which statement ***best*** describes the *y*-intercept of the equation?

A. the number of hours spent online if a student's grade were zero

B. the average change in the grade of a student per hour spent online

C. the grade a student should expect when no time is spent online

D. the point at which a student's grade is the lowest