TEST NAME: **NAMSIM11314F-IF.5**
TEST ID: **130106**
GRADE: **09**
SUBJECT: **Mathematics**
TEST CATEGORY: **My Classroom**

Student:

Class:

Date:

1. A high school baseball team is having a fundraiser at a restaurant. The function $f(x) = 4x$ models the amount of money that the restaurant will donate to the team if x customers purchase dinner. The restaurant agrees to donate a maximum of $500 to the team. What is the ***most appropriate*** domain of the function?

   A. all nonnegative integers ≤ 4

   B. all nonnegative integers ≤ 125

   C. all nonnegative integers ≤ 500

   D. all nonnegative integers

2. The function $f(x)=3.33x$ models the cost for Juan to fill his car with x gallons of gas. Juan's car can hold a maximum of 17 gallons of gas. What is the ***most appropriate*** domain of the function?

   A. $x \leq 17$

   B. $x \leq 56.61$

   C. $0 \leq x \leq 17$

   D. $0 \leq x \leq 56.61$

3. Martin modeled the distance, y, that runners traveled during a race as a function of the time, x, that they ran. Which would ***best*** describe the domain of this function?

   A. all integers

   B. all real numbers

   C. all positive integers

   D. all positive real numbers

4. An ice cream shop uses the function $f(p) = 2.50p - 300$ to calculate the amount of profit or loss, $f(p)$, the store makes each day after selling p number of ice cream cones. Which domain is appropriate for the function and shows the ice cream shop making a profit?

   A. all positive integers

   B. all positive rational numbers

   C. all integers greater than 120

   D. all rational numbers greater than 120

5. What is the domain of the function $f(x) = \frac{2x-2}{x+4}$?

   A. $x < -4$ or $x > -4$

   B. $x < -1$ or $x > -1$

   C. $x < 0$ or $x > 0$

   D. $x < 1$ or $x > 1$

6. The function $h(t) = 1{,}000(0.95)^t$ models the size of a mold culture t hours after being treated. What is the ***most appropriate*** domain for this function?

   A. all integers

   B. positive integers

   C. all rational numbers

   D. positive rational numbers

7. The function $f(x) = 1{,}575 - 225x$ models the value of a computer x years after it was purchased. What is an appropriate domain for this function?

   A. $x \geq 0$

   B. $x \leq 7$

   C. $0 \leq x \geq 7$

   D. $0 \leq x \leq 7$

8. Connor is earning money by mowing lawns over the summer. The amount of profit he makes from mowing x lawns is modeled by the function $p(x) = 20x - 75$. What is the ***most appropriate*** domain of the function?

   A. all rational numbers

   B. all non-negative rational numbers

   C. all integers

   D. all non-negative integers

9. Jorge plans to save $25 a week to purchase a new bike. The function $f(x) = 250 - 25x$ models the amount of money that Jorge will need to purchase the bike x weeks after he starts saving. Which is the ***most appropriate*** domain for the function?

   A. all integers ≥ 10

   B. all integers ≤ 10

   C. all non-negative integers ≥ 10

   D. all non-negative integers ≤ 10

10. The function $f(x) = 105x + 12.95$ models the total cost to purchase x airplane tickets from a company. What is the ***most appropriate*** domain of the function?

    A. all non-negative real numbers

    B. all non-negative integers

    C. all real numbers

    D. all integers

11. A rental company uses the function $f(x) = 150x + 75$ to calculate the cost to rent a beach house x number of nights. The maximum number of nights the beach house can be rented is 30. What is the domain of the function?

    A. $0 \leq x \leq 30$, where x is a whole number

    B. $0 < x < 30$, where x is a whole number

    C. $0 \leq x \leq 4{,}575$, where x is a whole number

    D. $0 < x < 4{,}575$, where x is a whole number

12. For what domain is the function $f(x) = 2^x - 4$ positive?

A. $x \geq 4$

B. $x > 4$

C. $x \geq 2$

D. $x > 2$

13. For what domain is the function $f(x) = \left(\frac{1}{3}\right)^x - 1$ positive?

A. all positive real numbers

B. all negative real numbers

C. all positive integers

D. all negative integers

14. The art club at a high school is selling baked goods to raise money to paint a mural in the gym. The function $f(x)=0.50x$ models the profit the club makes for selling x number of baked goods. If the club has 225 baked goods to sell, what is the domain of the function?

A. $0 \leq x \leq 112.50$

B. $0 \leq x \leq 225$

C. $x \leq 225$

D. $x \leq 0.50$

15. The total cost for potatoes, y, at a grocery store can be modeled by the equation $y = 0.59x$, where x is the number of pound of potatoes. What is the ***most appropriate*** domain of the function?

A. all nonnegative rational numbers

B. all nonnegative integers

C. all rational numbers

D. all integers

16. Which scenario would have negative values as part of its domain when y is a function of x?

A. the temperature, y, of a cooling object after x hours

B. the number of hours of television that James watched, y, in x days

C. the amount of space available on a hard drive, y, after x months

D. the number of people at the pool, y, based on the temperature outside, x

17. Sarah's car holds a maximum of 12 gallons of gas. The function $f(g) = 3.50g$ models the relationship between the total cost of gas, $f(g)$, and the number of gallons of gas purchased, g. What is the ***most appropriate*** domain of the function?

A. $g < 12$

B. $g \leq 12$

C. $0 < g < 12$

D. $0 \leq g \leq 12$

18. A house painter can paint one wall every 30 minutes during an 8-hour shift. Which ***best*** describes the domain if the number of walls the painter can paint is a function of time?

A. [0, 16]

B. [0, 8]

C. {0, 1, 2, 3, 4, 5, 6, 7, 8}

D. {0, 0.5, 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8}

19. The table below shows the population of a state during different years.

Year (x)	**Population** (y)
2004	8,500,000
2006	8,900,000
2007	9,000,000
2008	9,200,000
2010	9,500,000

What is the ***approximate***relative domain of the line of best fit for the data?

A. $x > 0$

B. $x > 1650$

C. $x > 1952$

D. $x > 2004$

20. A company uses the function $f(x) = 20x - 500$ to calculate profit or loss, where x is the number of products sold. What is the ***most appropriate*** domain of the function?

A. all integers

B. all real numbers

C. all whole numbers

D. all rational numbers