

F.IF.B.5: Domain and Range

- 1 Which domain would be the most appropriate set to use for a function that predicts the number of household online-devices in terms of the number of people in the household?
 - 1) integers
 - 2) whole numbers
 - 3) irrational numbers
 - 4) rational numbers

- 2 A construction company uses the function $f(p)$, where p is the number of people working on a project, to model the amount of money it spends to complete a project. A reasonable domain for this function would be
 - 1) positive integers
 - 2) positive real numbers
 - 3) both positive and negative integers
 - 4) both positive and negative real numbers

- 3 A store sells self-serve frozen yogurt sundaes. The function $C(w)$ represents the cost, in dollars, of a sundae weighing w ounces. An appropriate domain for the function would be
 - 1) integers
 - 2) rational numbers
 - 3) nonnegative integers
 - 4) nonnegative rational numbers

- 4 An online company lets you download songs for \$0.99 each after you have paid a \$5 membership fee. Which domain would be most appropriate to calculate the cost to download songs?
 - 1) rational numbers greater than zero
 - 2) whole numbers greater than or equal to one
 - 3) integers less than or equal to zero
 - 4) whole numbers less than or equal to one

- 5 The daily cost of production in a factory is calculated using $c(x) = 200 + 16x$, where x is the number of complete products manufactured. Which set of numbers best defines the domain of $c(x)$?
 - 1) integers
 - 2) positive real numbers
 - 3) positive rational numbers
 - 4) whole numbers

- 6 Officials in a town use a function, C , to analyze traffic patterns. $C(n)$ represents the rate of traffic through an intersection where n is the number of observed vehicles in a specified time interval. What would be the most appropriate domain for the function?
 - 1) $\{\dots -2, -1, 0, 1, 2, 3, \dots\}$
 - 2) $\{-2, -1, 0, 1, 2, 3\}$
 - 3) $\{0, \frac{1}{2}, 1, 1\frac{1}{2}, 2, 2\frac{1}{2}\}$
 - 4) $\{0, 1, 2, 3, \dots\}$

- 7 The function $h(t) = -16t^2 + 144$ represents the height, $h(t)$, in feet, of an object from the ground at t seconds after it is dropped. A realistic domain for this function is
 - 1) $-3 \leq t \leq 3$
 - 2) $0 \leq t \leq 3$
 - 3) $0 \leq h(t) \leq 144$
 - 4) all real numbers

F.IF.B.5: Domain and Range**Answer Section**

1 ANS: 2 REF: 011506ai

2 ANS: 1 REF: 011615ai

3 ANS: 4 REF: 061623ai

4 ANS: 2 REF: 081620ai

5 ANS: 4 REF: 011719ai

6 ANS: 4

There are no negative or fractional cars.

REF: 061402ai

7 ANS: 2

$$0 = -16t^2 + 144$$

$$16t^2 = 144$$

$$t^2 = 9$$

$$t = 3$$

REF: 081423ai