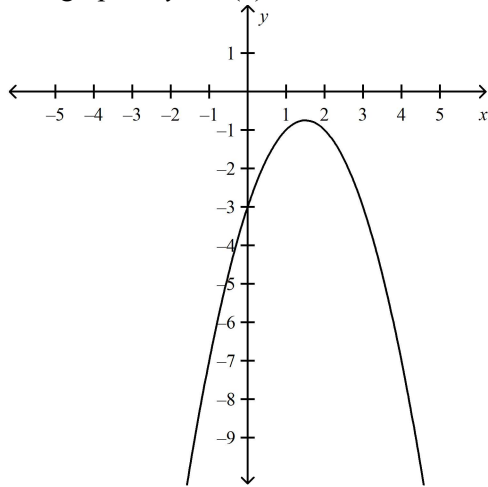


11U U2: Intro to Functions - Domain and Range Extra W24

Multiple Choice

Identify the choice that best completes the statement or answers the question. Circle the letter of your choice.

- Which relation is not a function?
 - $\{(-13, -10), (-15, -12), (-11, -8), (-16, 4)\}$
 - $\{(8, 17), (5, 5), (8, -3), (4, -1)\}$
 - $\{(-14, -2), (-10, 6), (-1, 3), (10, 6)\}$
 - $\{(0, -2), (-4, 6), (4, 15), (12, 6)\}$
- Evaluate $f(x) = -4x^2 + 7$ for $f(1) + f(-2)$.
 - 6
 - 3
 - 26
 - 94
- Consider the functions $f(x) = -(x^2) + 6x$ and $g(x) = x^2 - 9x + 1$. Which of the following is true?
 - $f(-3) > g(-3)$
 - $f(0) = g(0)$
 - $f(4) < g(4)$
 - $f(-2) < g(-2)$
- The graph of $y = h(x)$ is shown.

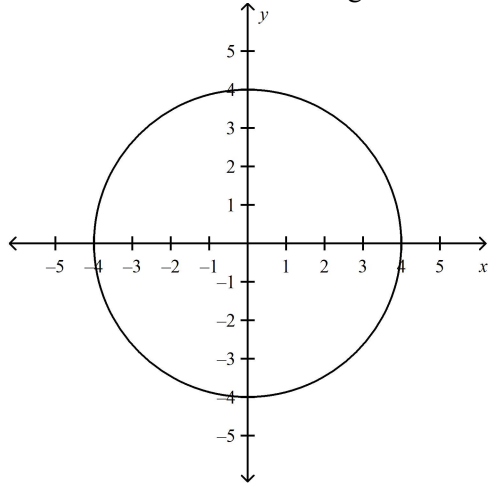


Evaluate $h(-1) + h(4)$.

- 14
 - 12
 - 3
 - 0
- What are the domain and range of the function $f(x) = \sqrt{x - 5}$?
 - Domain = $\{x \in \mathbf{R}\}$
Range = $\{y \in \mathbf{R}\}$
 - Domain = $\{x \in \mathbf{R} \mid x \geq 0\}$
Range = $\{y \in \mathbf{R} \mid y \geq 0\}$
 - Domain = $\{x \in \mathbf{R} \mid x \geq 25\}$
Range = $\{y \in \mathbf{R} \mid y \geq 1\}$
 - Domain = $\{x \in \mathbf{R} \mid x \geq 5\}$
Range = $\{y \in \mathbf{R} \mid y \geq 0\}$

6. What are the domain and range of the relation that contains the points $\{(-16, -10), (-14, -8), (-11, -3), (-7, 4), (-1, -8)\}$?
- Domain = $\{-16, -14, -11, -10, -8, -7, -3, -1, 4\}$
Range = $\{-16, -14, -11, -10, -8, -7, -3, -1, 4\}$
 - Domain = $\{-10, -8, -3, 4\}$
Range = $\{-16, -14, -11, -7, -1\}$
 - Domain = $\{-16, -14, -11, -7, -1\}$
Range = $\{-10, -8, -3, 4\}$
 - Domain = $\{-16 \leq x \leq -1\}$
Range = $\{-10 \leq y \leq 4\}$

7. What are the domain and range of the relation shown?

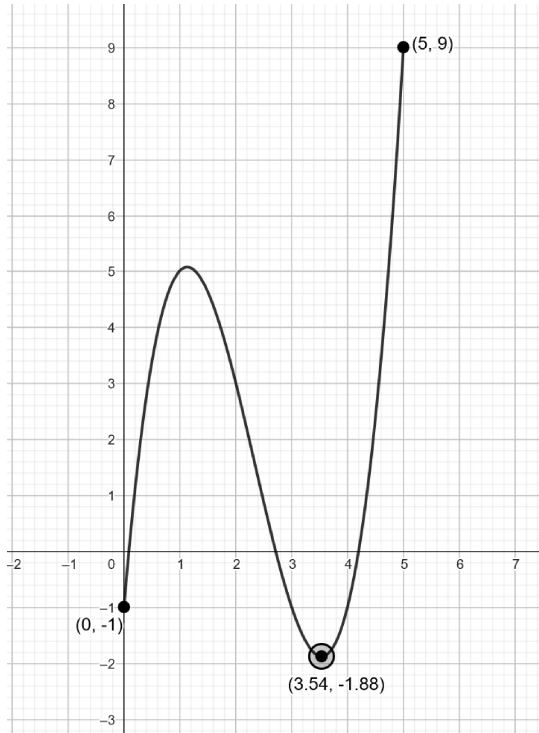


- Domain = $\{x \in \mathbf{R} \mid -4 \leq x \leq 4\}$
Range = $\{y \in \mathbf{R} \mid -4 \leq y \leq 4\}$
 - Domain = $\{x \in \mathbf{R} \mid -4 < x < 4\}$
Range = $\{y \in \mathbf{R} \mid -4 < y < 4\}$
 - Domain = $\{x \in \mathbf{I}\}$
Range = $\{y \in \mathbf{I}\}$
 - Domain = $\{-4, -3, -2, -1, 0, 1, 2, 3, 4\}$
Range = $\{-4, -3, -2, -1, 0, 1, 2, 3, 4\}$
8. What are the domain and range of the function $d(x) = 5(x - 9)^2 - 32$?
- Domain = $\{x \in \mathbf{R}\}$
Range = $\{y \in \mathbf{R} \mid y \geq 0\}$
 - Domain = $\{x \in \mathbf{R}\}$
Range = $\{y \in \mathbf{R} \mid y \geq -32\}$
 - Domain = $\{x \in \mathbf{R}\}$
Range = $\{y \in \mathbf{R} \mid y \geq -842\}$
 - Domain = $\{x \in \mathbf{R}\}$
Range = $\{y \in \mathbf{R}\}$
9. What are the domain and range of the function $f(x) = \sqrt{3 - x}$?
- Domain = $\{x \in \mathbf{R}\}$
Range = $\{y \in \mathbf{R}\}$
 - Domain = $\{x \in \mathbf{R} \mid x \leq 3\}$
Range = $\{y \in \mathbf{R} \mid y \geq 0\}$
 - Domain = $\{x \in \mathbf{R} \mid x \geq 0\}$
Range = $\{y \in \mathbf{R} \mid y \geq 1\}$
 - Domain = $\{x \in \mathbf{R} \mid 0 \leq x \leq 3\}$
Range = $\{y \in \mathbf{R} \mid y \geq 0\}$

Written Solutions

Provide solutions clearly showing your work.

10. State the Domain and Range of the relation in the sketch - is the relation also a function? Why or why not?



11. Plot the relation $g(x) = x^2 - 2x - 1$ given the domain $D_g = \{-2, 0, 1, 2, 3\}$. Is $g(x)$ a function?

