

Function Notation Exercises

Part I:

- Write each of the following mathematical statements using normal English prose.
- Write what each of these statements tells you about the graph of the function.

Example: The statement $f(3) = 7$ should be written as:

- The unique range element associated with the domain element 3 by the function f is 7.
- The point $(3, 7)$ is on the graph of f .

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| 1) $f(2) = 8$ | 2) $f(5) = (5)(67)$ | 3) $f(\pi) = \sqrt{23}$ |
| 4) $f(x) = 3x + 1$ | 5) $f(x) = 2^x + 5^x$ | 6) $f(x) = \pi^x$ |
| 7) $f(x) = x^\pi$ | 8) $f \circ g(x) = f(g(x))$ | 9) $f \circ g(2) = 5$ |
| 10) $f(7) > 48$ | 11) $f(2) < 5^2$ | 12) $f(3) > g(x)$ |

Part II:

- Write each of the following mathematical statements using correct mathematics notation.

Example: The statement; “The range element associated with the domain element 4 by the function f is 7” should be written as: $f(4) = 7$.

- The range element associated with the domain element 8 by the function f is 11.
- 45 is the range element associated with the domain element 9 by the function g .
- The rule for the function f is: The range element associated with a domain element is the domain element raised to the 11th power.
- The range element associated with the domain element 14 is less than the range element associated with the domain element $\frac{3}{\sqrt{7}}$ by the same function f .
- Two functions f and g have the same domains and for each domain element, the range element associated with it by the function g is greater than the range element associated with it by the function f .
- The point $(3, 5)$ is on the graph of the function h .
- The point $\left(\frac{3}{4}, \frac{2\pi}{3}\right)$ is on the graph of the function jim .
- 86 is a zero of the function k .
- The function f is a linear function.
- The function f is a quadratic function.