

Worksheet 8

Priyanka Rana

1. Define a function. What is its domain and range. Explain in your own words.
2. What is a Polynomial? What is a Polynomial function? Give an example of each.
3. Let $f = \{(x, y) : x, y \in \mathbb{N}; y = 2x^2\}$ be a relation on \mathbb{N} . What is its domain, co-domain and range. Is this relation a function? Why or Why not?
4. Let $f = \{(1, 1), (2, 2), (3, 3), (4, 4), \dots, (100, 100)\}$ be a relation on \mathbb{N} . What is its domain, co-domain and range. Write f in set-builder form. Is this relation a function? Why or why not?

5. If $f(x) = \begin{cases} x^2 & 0 \leq x \leq 2 \\ 2x & 2 \leq x \leq 5 \end{cases}$. Is f a function? Justify. What is its domain?

$g(x) = \begin{cases} x^2 & 0 \leq x \leq 3 \\ 2x & 3 \leq x \leq 5 \end{cases}$. What about g ?