

Question22945

Decide whether y is a function of x .

18. $5x - y = 10$

19. $x^2 + y^2 = 4$

Solution.

By the definition f is a function for every $x \in X$ there is exactly one element y such that the ordered pair (x, y) is contained in the subset defining f .

18. Consider the relation $5x - y = 10$. It is clear that for each real number x there is the unique $y = 5x - 10$ such that $f(x) = y$.

19. The relation $x^2 + y^2 = 4$ is not a function as for the element $x = 1$ there are two points $y_1 = \sqrt{4 - x^2} = \sqrt{3}$ and $y_2 = -\sqrt{4 - x^2} = -\sqrt{3}$ such that $y = f(x)$

Answer. $5x - y = 10$ is a function, $x^2 + y^2 = 4$ is not a function.