

Math 1513 - College Algebra

Quiz #7 - 2008.10.09

Solutions

1. Decide whether each of the following relations defines a function.

a) $f = \{(a, b), (c, d), (e, f), (g, h)\}$

This is a function.

b) g is the relation which assigns to a person x their mother y .

This is a function since every person only has exactly one mother.

c) h is the relation which assigns to a person x their child y .

This is not a function, since there are people with more than one child.

d) $x^2 + y^2 = 1$

This is not a function, this is the unit circle, whose graph does not pass the vertical line test.

e) $3x - 5y = 6$

This is a function.

2. State the domain of each of the following functions.

a) $f = \{(a, b), (c, d), (e, f), (g, h)\}$

Domain is $\{a, c, e, g\}$.

b) $g = x^2 + 1$

Domain is $(-\infty, \infty)$.

c) $h = x + \frac{1}{x}$

Domain is $(-\infty, 0) \cup (0, \infty)$.

d) $i = \sqrt{1 - x^2}$

Domain is $[-1, 1]$.

e) $j = \frac{1}{x-1}$

Domain is $(-\infty, 1) \cup (1, \infty)$.