Function Terminology and Notation

(1) Let $f(x) = \frac{1}{x} + x^2$.

    (a) What is $f(4)$?

    (b) What is $f(-1)$?

    (c) What is $f(\frac{1}{x})$? (Simplify as much as possible)

(2) Let $R(t) = 4t - t^2$. What is $R(x - 5)$? Simplify your answer.

(3) Let $Q(z) = x + 2z$.

    (a) What is Q a function of?

    (b) What is $Q(3)$?

    (c) What is $Q(a)$?

(4) If f is a function, then which is impossible?
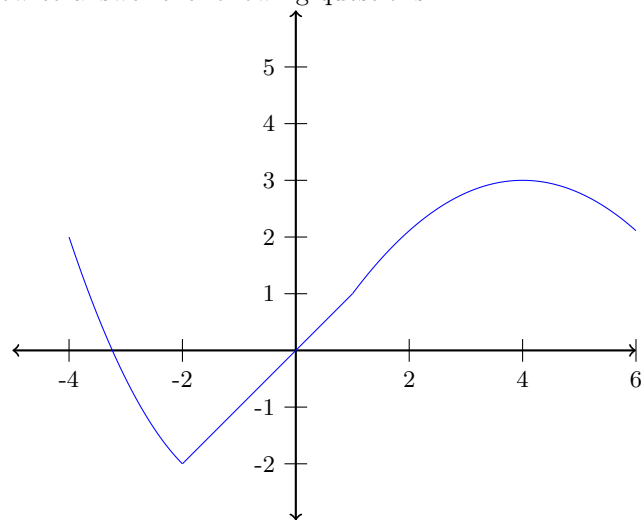   (a) $f(2) = 4$ and $f(8) = 4$.
    (b) $f(4) = 2$ and $f(4) = 8$.

(5) If the point $(3, 5)$ is on the graph of a function, what does that mean?

(6) If the value 7 is in the domain of a function, what does that mean in terms of its graph?

(7) If the value 7 is in the range of a function, what does that mean in terms of its graph?

(8) Use the graph of f below to answer the following questions.

(a) What is $f(3)$? (approximately)

(b) What is the domain of the function?

(c) What is the range of the function?