Functions versus relations and the vertical-line test

Name: _____ Date: _____

6 questions | 12 marks

1. Decide whether $\{(0,1),(1,1),(2,1)\}$ is a function of x. [2 marks]

2. Decide whether $\{(-2,0),(-2,4),(3,5)\}$ is a function of x. [2 marks]

3. Is the relation $x=3$ a function of x? Explain. [2 marks]

4. Is $y = x^2$ a function of x, and is each output produced by only one input? [2 marks]

5. Restrict $x^2 + y^2 = 16$ to give a function with non-positive outputs. [2 marks]

6. A table lists $f(0) = 1$, $f(1) = 3$ and $f(2) = 5$. Does it prove $f(x) = 2x + 1$ for every real x? [2 marks]