PROPERTIES OF FUNCTIONS

Directions: Indicate if the following equation is a function. If it is not a function, give a counterexample that shows that it is not a function.

1.) $y = 4x^3 - 7x + 3$

2.) $y^2 = x^2 + 9$

3.) $y = \sqrt{2x + 1}$

4.) $y = \frac{4}{x-3}$

5.) $y = |4x - 2|$

6.) $y^3 = 2x + 15$

Directions: Apply function notation to solve the following: $f(x) = \sqrt{2x + 1}$ & $g(x) = 2x^2 - 5x$

7.) $f(4) =$

8.) $g(-2) =$

9.) $f(-1) =$

10.) $g(\sqrt{3}) =$

11.) $f(8x - 5) =$

12.) $g(2x + 1) =$

13.) $f(x + h) =$

14.) $g(x + h) =$

Directions: Find the domain of each function and write your solution using interval notation.

15.) $f(x) = x^2 + 4$

16.) $b(x) = \frac{x}{x^2-4}$

17.) $g(x) = \frac{x+5}{x^3-7x^2-18x}$

18.) $c(x) = \sqrt{4x+8}$

19.) $h(x) = \frac{5}{x-2}$

20.) $d(x) = x^3 - 5x + 2$

21.) $p(x) = \sqrt{x^2 - 64}$

22.) $e(x) = \frac{4}{x^3+1}$

23.) $a(x) = \frac{3}{x^2+2}$

24.) $k(x) = \frac{x}{\sqrt{x^2-4x+3}}$