

Algebra 3 Assignment # 1

Determine if the equation is function. If it is find the domain:

(1) $y = \frac{1}{\sqrt{x}}$

(2) $y^2 = 2x$

(3) $y = \frac{1}{x+1}$

(4) $y = \frac{1}{1 \pm x}$

(5) $y = \frac{1}{\sqrt{x^2 - x - 6}}$

(6) $y = \sqrt{x^2 - x - 6}$

(7) $\frac{x+7}{\sqrt[3]{x^2-16}}$

(8) $\sqrt{\frac{x-3}{64-x^2}}$

(9) $\sqrt{\frac{x^2-2x-24}{x^2+15x+56}}$

Find $f(-1)$, $f(0)$, and $f(1/2)$ if they exist.

(10) $f(x) = 2x - 1$

(11) $f(x) = x^2$

(12) $f(x) = x^3 - 1$

(13) $f(x) = x^4 + x^2$

(14) $f(x) = \frac{1}{x-1}$

(15) $f(x) = \frac{1}{\sqrt[3]{x}}$

Answers:

1. $x > 0$

2. No

3. $x \neq 1$

4. No

5. $x < -2$ or $x > 3$

6. $x \leq -2$ or $x \geq 3$

7. $x \neq \pm 4$

8. $x < -8$ or $-3 \leq x < 8$

9. $x < -8$; $-7 < x \leq 4$; $x \geq 6$

10. -3, -1, 0

11. 1, 0, 1/4

12. -2, -1, -7/8

13. 2, 0, 5/16

14. -1/2, -1, -2

15. -1, NS, $\sqrt[3]{2}$