Solve for x and write answer in term of set builder form?

28.
$$|3x + 1| < 4$$

29.
$$|x+2| > 1$$

28.
$$|3x+1| < 4$$
 29. $|x+2| > 1$ **30.** $\left|\frac{1}{2}x-1\right| \ge 2$

31.
$$|5-2x| \ge 4$$

32.
$$|7x + 1| > 3$$

31.
$$|5-2x| \ge 4$$
 32. $|7x+1| > 3$ **33.** $\frac{1}{|x-1|} < 2$

$$34. \ \frac{1}{|3x+1|} \ge 5$$

35.
$$\frac{3}{|2x-1|} \ge 4$$

$$36. \ \frac{2}{|x+3|} < 1$$

Solve for 'x' and write answer in term of interval?

29.
$$\frac{x}{x-3} < 4$$

30.
$$\frac{x}{8-x} \ge -2$$

29.
$$\frac{x}{x-3} < 4$$
 30. $\frac{x}{8-x} \ge -2$ **31.** $\frac{3x+1}{x-2} < 1$

32.
$$\frac{\frac{1}{2}x - 3}{4 + x} > 1$$
 33. $\frac{4}{2 - x} \le 1$ 34. $\frac{3}{x - 5} \le 2$

33.
$$\frac{4}{2-x} \le 1$$

34.
$$\frac{3}{x-5} \le 2$$

35.
$$x^2 > 9$$

36.
$$x^2 \le 5$$

37.
$$(x-4)(x+2) > 0$$

37.
$$(x-4)(x+2) > 0$$
 38. $(x-3)(x+4) < 0$

39.
$$x^2 - 9x + 20 \le 0$$

39.
$$x^2 - 9x + 20 < 0$$
 40. $2 - 3x + x^2 > 0$

In Exercises 19-32, find the domain of the function.

19.
$$f(x) = x^2 + 3$$

20.
$$f(x) = 7 - x^2$$

21.
$$f(x) = \frac{3x+1}{x^2}$$

21.
$$f(x) = \frac{3x+1}{x^2}$$
 22. $g(x) = \frac{2x+1}{x-1}$

23.
$$f(x) = \sqrt{x^2 + 1}$$
 24. $f(x) = \sqrt{x - 5}$

24.
$$f(x) = \sqrt{x-5}$$

25.
$$f(x) = \sqrt{5-x}$$

25.
$$f(x) = \sqrt{5-x}$$
 26. $g(x) = \sqrt{2x^2+3}$

27.
$$f(x) = \frac{x}{x^2 - 1}$$

27.
$$f(x) = \frac{x}{x^2 - 1}$$
 28. $f(x) = \frac{1}{x^2 + x - 2}$

29.
$$f(x) = (x + 3)^{3/2}$$
 30. $g(x) = 2(x - 1)^{5/2}$

30.
$$g(x) = 2(x-1)^{5/2}$$

31.
$$f(x) = \frac{\sqrt{1-x}}{x^2-4}$$

31.
$$f(x) = \frac{\sqrt{1-x}}{x^2-4}$$
 32. $f(x) = \frac{\sqrt{x-1}}{(x+2)(x-3)}$