

$$1. h(x) = \frac{x-5}{x^2-25}$$

$$x^2 - 25 = 0$$

$$x^2 = 25$$

$$x = \pm \sqrt{25}$$

$$x = \pm 5$$

$$\boxed{x \neq -5 \quad x \neq 5}$$

$$(-\infty, -5) \cup (-5, 5) \cup (5, \infty)$$

FINDING DOMAIN OF RATIONAL FUNCTION

① SET DENOM. EQUAL TO ZERO AND SOLVE

② PUT A SLASH THAN EQUALS

$$2. f(x) = \frac{x+3}{x^2+9}$$

$$x^2 + 9 = 0$$

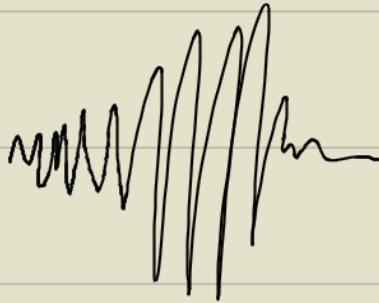
$$x^2 = -9$$

$$x = \pm \sqrt{-9}$$

$$x = \pm 3i$$

$$\boxed{(-\infty, \infty)}$$

LIMIT



$$3. \text{ AS } x \xrightarrow{\substack{\uparrow \\ \text{APPROACHES}}} -3^+ f(x) \rightarrow \underline{\infty}$$

RIGHT HAND SIDE

$$4. \text{ AS } x \rightarrow 1^+ f(x) \rightarrow \underline{\infty}$$

$$5. \text{ AS } x \rightarrow \infty f(x) \rightarrow \underline{0}$$

LEFT HAND SIDE

$$6. \text{ AS } x \rightarrow 1^- f(x) \rightarrow \underline{-\infty}$$