1. Sketch the rational function by graphing the horizontal asymptote, vertical asymptote, and zeros of
$$f(x) = \frac{x-3}{x+5}.$$

2. Sketch the rational function by graphing the horizontal asymptote, vertical asymptote, and zeros of
$$f(x) = \frac{x-1}{x^2-16}.$$

3. Solve the following inequality:

$$\frac{x-1}{x^2-16} \geq 0.$$

4. Solve the following inequality:

$$20(x+11)^5(x+6)^3(x-1)^2(x-3)^4(2x-7)^5 < 0.$$