For the following functions ...

- List any roots and the behavior of the graph at the roots.

- List all asymptotes, and the degree of all vertical asymptote.

- Find any points where the graph intersects a horizontal or oblique asymptote.

- Find the leading term and use it to determine the long term behavior.

- Label your axes

1. $f(x) = \dfrac{x^2 + 3x + 2}{x - 1}$

2. $g(x) = \dfrac{3}{x^2 - 5x + 6}$

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

4. $f(x) = \dfrac{x^2 - 16}{x}$

5. $h(x) = (x + 4)^3(x - 1)^2$

6. $g(x) = (x + 2)(x)(2 - x)$

7. $f(x) = \dfrac{(x - 1)(x + 1)}{(x - 3)(x + 3)}$

8. $q(x) = \dfrac{1}{x^2}$