1. Identify any vertical, and/or horizontal asymptote of each function.

   a. $y = \dfrac{2x+2}{3x+1}$

   b. $y = \dfrac{2x^2-x+4}{x-1}$

2. Identify points of discontinuity and horizontal of each function. Then determine if the points of discontinuity are vertical asymptotes or if they are holes in the graph. Show your work.

   a. $y = \dfrac{3x-9}{x-3}$

   b. $y = \dfrac{x+4}{x^2-16}$

3. Give everything about the following functions (*Hint*: zeroes, asymptotes, intercepts, holes, domain) and sketch a graph. **Make sure you graph all important information. Make sure to label your axis.**

$$I. \quad y = \frac{x+2}{x^2 - 4}$$

$$II. \quad f(x) = \frac{3x - 4}{x + 2}$$

$$III. \quad g(x) = \frac{x^2 - 49}{x^2 - 16}$$

V.A.:	V.A.	V.A.
H.A.:	H.A.	H.A.
Zeroes:	Zeros	Zeros
Holes:	Holes	Holes
y-intercept:	y-intercept	y-intercept
Domain:	Domain	Domain