

Student ID		

Last Name: _____

First Name: _____

Show all your work.
If necessary, use extra sheets.

When appropriate,
BOX your final answer.

MA1
Homework

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For each function below, state:

- i) the equation(s) of the vertical asymptote(s), if any;
- ii) the equation(s) of the horizontal asymptote(s), if any; and
- iii) the coordinates of the removable point(s) of discontinuity, or “holes,” if any.

1. $f(x) = \frac{9 - 6x + x^2}{x^2 - 9}$

2. $f(x) = \frac{x - 9}{\sqrt{4x^2 + 3x + 2}}$

3. $f(x) = \frac{|x| + 1}{|x| - 1}$

$$4. f(x) = \frac{27x^3 - 1}{3x - 1}$$

$$5. f(x) = \frac{\sqrt{x} - \sqrt{3}}{x^2 - 3x}$$

$$6. f(x) = \frac{x^3 + 6x^2 + 5x - 12}{x^3 + 8x^2 + 19x + 12}$$