

## MCR3U – Unit 2 Review: The Big Questions

1. Simplify and state restrictions. Be sure to identify asymptotes and holes.

$$f(x) = \frac{-2x^2 + 2}{x^2 - x - 20} \div \frac{2x^2 - x - 3}{x^2 + 8x + 16} \times \frac{6x^2 - 7x - 3}{12x^2 - 6x}$$

2. Given  $f(x)$  above and  $g(x)$  below,
- Is  $g(x)$  equivalent to  $f(x)$ ? Explain and show your work.  
Hint: you cannot factor  $g(x)$ !
  - Strengthen/verify your claim by substituting two  $x$ -values into  $f(x)$  and  $g(x)$ .

$$g(x) = \frac{-3x^3 - 10x^2 + 9x + 4}{6x^3 - 33x^2 + 15x}$$

3. Given the rational expression of  $h(x)$  below,
- Simplify and state restrictions.
  - Is  $h(x)$  equivalent to  $f(x)$  or  $g(x)$ ?
  - Strengthen/verify your claim by substituting the same 2  $x$ -values into  $h(x)$  that you substituted into  $f(x)$  and  $g(x)$  in question 2b.

$$h(x) = \frac{x^2 + 3x - 4}{3x^2 - 15x} - \frac{-6x - 2}{4x^2 - 22x + 10}$$