**MHF4U Advance Function**

**Chapter 3 Assignment #1**

This assignment will be used in calculations of your final mark. Communication will be accessed based on your mathematical communication. Show all your work.

**Name:**

1. Which of the following is ***not*** an asymptote of the rational function?

A. *x* = 1

B. *x* = -3

C. *x* = 5

2. Which statement describes the end-behavior around the vertical asymptote of$ y=\frac{4x+8}{-2x+10}$?

F. As *x* ⭢ $5^{+}$, *y* ⭢ - ∞

 As *x* ⭢ $5^{-}$, *y* ⭢ + ∞

G. As *x* ⭢ + ∞, *y* ⭢ – ∞

 As *x* ⭢ - ∞, *y* ⭢ + ∞

H. As *x* ⭢ + ∞, *y* ⭢ +

 As *x* ⭢ - ∞, *y* ⭢ -

J. As *x* ⭢ $5^{+}$, y ⭢ + ∞

 As *x* ⭢ $5^{-}$, *y* ⭢ - ∞

 3. What is the domain of$ f\left(X\right)= \frac{2}{x-14}$ ?

A. x ∈ R

B. x ∈ R, x ≠ 14

C. x ∈ R, x ≠ 12

D. x ∈ R, x ≠ 5

4. Which of the following is a ***rational*** function?

F. 

G. $g\left(X\right)= 3x^{3}$

H. $h\left(X\right)= \frac{2}{x^{2}+3x-4}$

J. 

**5. Graph the following function. State asymptotes, end behaviour, intercepts, domain, and range.**

|  |
| --- |
| 5. $F\left(x\right)=\frac{x^{2}+5x+6}{x^{2}-8x+12} $*x*-intercept(s):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ *y*-intercept:\_\_\_\_\_\_\_\_\_\_Vertical Asymptote(s):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Horizontal Asymptote:\_\_\_\_\_\_\_\_\_\_\_Domain:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Range:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**6. Graph the following function. State asymptotes, end behaviour, intercepts, domain, and range.**

7. 

*x*-intercept(s):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ *y*-intercept:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Vertical Asymptote(s):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Horizontal or Oblique Asymptote:\_\_\_\_\_\_\_\_\_\_\_

Domain:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Range:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_