

*University of Lethbridge*  
Department of Mathematics and Computer Science  
19 September, 2017  
**MATH 1560 - Test #1 – Individual Stage**  
Examiner: Sean Fitzpatrick

Print your name and student number clearly in the space above. You may remove this cover page, and use the back for scrap paper. If you want any work on the back of this page to be graded, you must clearly indicate this on the page containing the corresponding question.

Answer the questions in the space provided. Show all work and necessary justification. Partial credit may be awarded for partially correct work.

No outside aids are permitted, with the exception of a basic calculator.

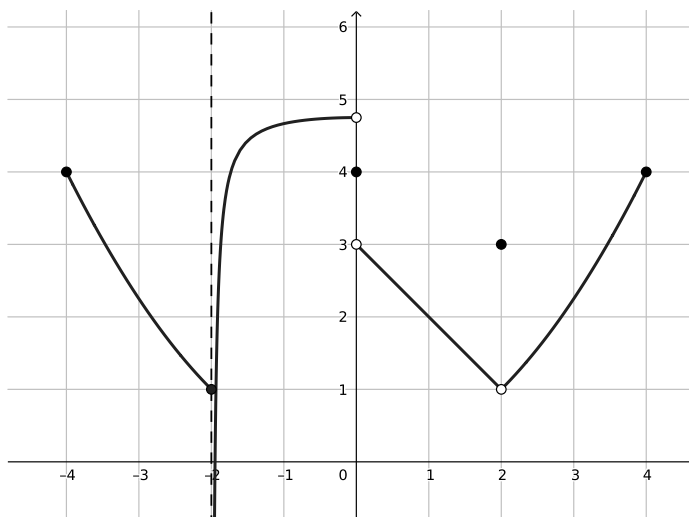
1. Evaluate the following limits:

[3]      (a)  $\lim_{x \rightarrow 3} \frac{x^2 - 6x + 9}{x^2 - 5x + 6}$

[3]      (b)  $\lim_{x \rightarrow 0} \frac{\tan(7x)}{x}$

[3]      (c)  $\lim_{x \rightarrow 1} \frac{\sqrt{x} - 1}{x^2 - 1}$  (Suggestion: common denominator.)

- [9] 2. The graph of a function  $f$  is given below:



Determine the following values (write DNE if something does not exist):

(a) The domain of  $f$ : \_\_\_\_\_

(f)  $\lim_{x \rightarrow 2^-} f(x)$ : \_\_\_\_\_

(b)  $\lim_{x \rightarrow -2^-} f(x)$ : \_\_\_\_\_

(g)  $\lim_{x \rightarrow 2^+} f(x)$ : \_\_\_\_\_

(c)  $\lim_{x \rightarrow -2^+} f(x)$ : \_\_\_\_\_

(h)  $\lim_{x \rightarrow 2} f(x)$ : \_\_\_\_\_

(d)  $\lim_{x \rightarrow -2} f(x)$ : \_\_\_\_\_

(i)  $f(2)$ : \_\_\_\_\_

(e)  $f(-2)$ : \_\_\_\_\_