

UNIT 1 TEST Functions, Graphs and Limits

**What do I need to see for you to earn maximum points (1/2 back) on your Test Corrections?**

Form A	Form B	What I need to see for test corrections so you can maximize your points back! Pay attention to details and show what you need to show! Ask questions if you are still confused. Your goal is complete understanding!
#1	#5	Correct lim notation Expand the expression, simplify, take the limit
#2	#6	Correct lim notation Factor everything, What happens when there is a same factor over same factor? Tell me and evaluate the limit
#3	#11	Correct lim notation Factor numerator then use conjugate factor strategy, reduce. Evaluate the limit
#4	#12	Correct lim notation Use LCD strategy, reduce and evaluate the limit
#5	#1	Draw a graph because you know what this function looks like. You do not need your calculator to do this. Explain why you know the limit value
#6	#7	This is a limit at infinity... which you should recognize as resulting in a HA. Show what terms are going to be dominant? Evaluate the limit.
#7	#8	Another limit at infinity... which you should recognize as resulting in a HA. Show what terms are going to be dominant? Evaluate the limit.
#8	#4	In order to earn points you must <u>discuss each option</u> A, B, C, D, & E explaining why each is true or false. Then make your conclusion.
#9	#2	In order to earn points you must <u>discuss each option</u> A, B, C, & D explaining why each is true or false. Then make your conclusion.
#10	#3	Correct lim notation Factor the sum of cubes correctly, reduce and evaluate the limit.
#11	#9	Discuss the true-ness or false-ness of each option A, B, C, D, & E then make a conclusion
#12	#10	Factor the function completely and explain what discontinuities occur on $f(x)$ . Discuss the true-ness or false-ness of each option I, ii, iii then make a conclusion.
#13	#13	State the theorem you are applying and state the pre-requisite condition of $f(x)$ that guarantees the theorem can be applied. Show work to justify.
#14	#14	Start with the inequality statement that is given. Using correct limit notation to show you are taking the limit of each part (left, middle, right) of the inequality. Evaluate the left and right limits because you can. What do these values tell you about the $\lim f(x)$ as $x \rightarrow 1$ ? State the theorem that explains why you can make your conclusion
#15a	#15a	This is a limit at infinity so what do you care about? Tell me. What does not matter? Tell me. State the value of the limit and the value of K.
#15b	#15b	Factor the denominator. State for what values of $x$ is the denominator zero? What is the $x$ -value in question for this limit? Tell me. What the condition must be true about the numerator for the limit to exist at the $x$ -value in question? Tell me. Make the numerator factor to create the condition you are looking for. State the value of the limit and the value of K.

#16A	#16B	<p>For a 3-part piece-wise function to be continuous, state what must be true about the 1<sup>st</sup> piece and the 2<sup>nd</sup> piece? And the 2<sup>nd</sup> piece and the 3<sup>rd</sup> piece?</p> <p>Write equations that represent this criteria.</p> <p>Now you should have a system of equations... and you learned in Math 1 and 2 and 3 and Pre-calculus, how to solve a system of equations with 2 variables and 2 unknowns. You must show the work to solve the system.</p> <p>Answers without supporting algebraic work are called BALD ANSWERS and we do not give any credit for bald answers.</p> <p>There is another way to solve this problem... and some students did so beautifully.</p>
#17A	#17A	<p>Given any rational function, the first thing you should always do is factor everything...</p> <p>When is a rational function going to have discontinuities? Tell me when and tell me the x-values where the function is discontinuous</p>
#17B	#17B	<p>For each of the TWO values found in part A.</p> <p>Tell me what type of discontinuity is happening and write a limit statement.</p> <p>If there is a hole state the (x,y) ordered pair.</p> <p>Write a limit statement for the hole.</p> <p>If there is a vertical asymptote, write the equation. Remember an equation will consist of "variable = constant" and not VA=constant. VA is not a variable, but rather an abbreviation for "vertical asymptote"</p> <p>Write a limit statement for the vertical asymptote.</p>
#17C	#17C	<p>If you have answered part B correctly, then in part C you only need to discuss horizontal asymptote(s).</p> <p>Write an equation for the horizontal asymptote, taking note of the correct equation form: "variable = constant" and not HA = constant.</p> <p>Write a limit statement for the HA</p>
#18A	#18B	<p>I suggest that you draw circles around the limit statements that belong in a group...</p> <p>Draw the feature on the graph that satisfies each limit statement.</p> <p>If you are still confused about how to draw graphs watch the video I posted on the class website found on the ABOUT page VIDEO #9, and then try again.</p>