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1.

2.a) The function equals  $2(x+2)/(x-1)$  so we can conclude that the limit at -1 exists and is 1.

b) See previous factored function. There is no limit at -2 due to one of the factors being  $(x+2)$

c) There is one asymptote at  $x=-2$ , by examining the equivalent term and the point that cancels out is a point of discontinuity.

3.a) Since the degree of both equations are equal on the top and bottom half you can conclude that the limit of both functions as they approach infinity are both 4, due to their coefficients. Thus we can use the squeeze theorem since  $4 \leq f(x) \leq 4$  we can assume that  $f(x)$  as it approaches infinity is 4.

b) Since the limit for the left function is negative infinity and the function for the right equation is positive infinity so it would not get squeezed in this case.

4.