

Warm up  
9/29/14

CALCULATOR ACTIVE

Unit 1 Limits and Continuity  
Unit Test

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Date \_\_\_\_\_

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**Part B Short Answer Questions:** Show all work for the problems below.

$$f(x) = \begin{cases} \frac{x^2 - 8x - 20}{x + 2} & x \neq -2 \\ bx - 3 & x = -2 \end{cases}$$

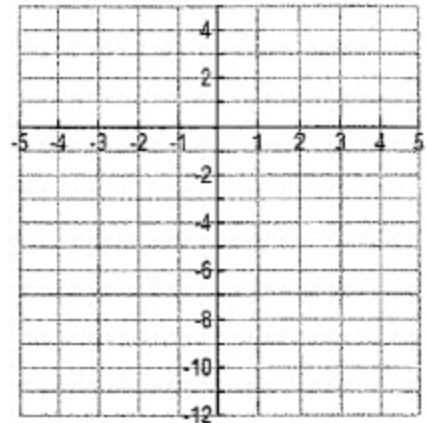
A. Use the function above to answer the following questions.

a)  $\lim_{x \rightarrow -2} f(x) =$

b) What value of  $b$  will make  $f$  continuous at  $x = -2$ ?

c) Sketch a graph of  $f$  below using the value you found for  $b$ .

d)  $\lim_{x \rightarrow -\infty} f(x) =$



e) If a function  $f$  is continuous at  $x = c$ , is it necessarily true that  $\lim_{x \rightarrow c} f(x)$  must exist? Explain.