

### Problem #5

This problem asks us to find:

$$\lim_{x \rightarrow 3} \frac{4(x^2 - 8x - 15)}{x - 3}$$

The answer given by a table of values and by SymPy is “does not exist”. (Because  $\lim_{x \rightarrow 3-} = \infty$ ,  $\lim_{x \rightarrow 3+} = -\infty$ ). To make the answer -8 as you documented, you need +15, i.e.:

$$\lim_{x \rightarrow 3} \frac{4(x^2 - 8x + 15)}{x - 3}$$

This also makes the function nicely factorable.

### Problem # 14

This one I think has another sign problem. The question asks us to find the derivative of

$$f(x) = x^2 + 7x - 4$$

You give the answer as  $2x - 7$ , but via the limit definition or the product rule, I get  $2x + 7$ .