1. Assignment 1.

Pretend that you are writing a textbook for Calculus I. At this point in the text the reader already knows the point-slope formula for the equation of a line. The reader also knows the formula for finding the derivative of polynomial functions. And finally, the student knows the relationship between derivatives and slopes of tangent lines. But the student has not yet solved any problems which involve finding the equation of a tangent line to the graph of a function. So you now write in your text the exercise below.

Your job is to write out a solution to the exercise with the intention that the exercise and the solution will appear in the textbook.

Write out a solution on scratch paper. Then when you have it “right,’ write your final version below. Be ready to hand it in a week from today.

Exercise. Let \( f(x) = -3x^2 + 17 \). Find the equation of the tangent line to the graph of \( f \) at the point \((2, 5)\) on the graph of \( f \).

Solution.
1. Assignment 1.

Pretend that you are the author of the notes for Math 3283. Students are complaining that there are no answers to exercises in the back of the notes. So you have decided to write out solutions for some exercises. Following is the exercise. You write out the solution! Note that you must justify your answer. How can you do that? Well, when will the statement “P unless Q” be false? For this to happen, P must be .. and Q must be .. If you use some mathematical fact, such as Note 1.1, which has appeared earlier in the notes, then you should refer to this fact.

Exercise. Write out a statement which has the same meaning as “P unless Q;” using some of the abbreviations &, ∨, ¬, →, and ↔. Justify your answer.

Solution.