Weekly Assignment 4

1. Use the algebraic definition of a derivative (forward difference quotient) to demonstrate that the power rule is true when
2. Use the algebraic definition of a derivative (forward difference quotient) to demonstrate that if then
3. Derivatives of sine and cosine: Given that the um of angle Trig formulas are:
   1. Use python to find and and include a screen shot of your code and the associated output.
   2. Use the algegraic definition and the result of part a to find the derivative of *f(x) = sin(x)*
   3. Use the algegraic definition and the result of part a to find the derivative of *f(x) = cos(x)*
4. Given the following functions *f*, find the formula for *f’(x)*
5. Given that
   1. Find the formula for the tangent line to *f* at the point (0, 4)
   2. Use the tangent line at *x = 0* to approximate *f(0.2)*
6. Given the following graphs of *f*, draw the graph of *f’*:

Chart, line chart

Description automatically generated