Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Section 2.1 – Part 1

Power Functions, derivatives when adding 2 functions, multiplying a function by a constant

1. On a separate sheet of paper, use the algebraic definition of a derivative (forward difference quotient) to demonstrate that the power rule is true when
2. Given that and :
   1. Use your knowledge of derivatives to fill in the following table:

|  |  |  |  |
| --- | --- | --- | --- |
| *h(x)* |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

* 1. What would this table suggest about the following derivatives

1. Given that and :
   1. Use your knowledge of derivatives to fill in the first two columns of the following table:

|  |  |  |  |
| --- | --- | --- | --- |
| *h(x)* |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

* 1. What would this table suggest about the following derivatives

1. Based on the previous two problems, write down rules for the following and describe a situation (include the unites of *x, f(x) and g(x) )* to make sense of them (money, position, etc. are fine)
2. Complete the associated online assignment on power functions to practice the mechanics of taking derivatives.