DIFFERENCE QUOTIENT AS AN AVERAGE RATE OF CHANGE:

This is the difference quotient:

 $\frac{f(x+h) - f(x)}{h}$



E.g. Find the difference quotient of y = 2x + 5

1.
$$f(x+h) = 2x + 2h + 5$$

2.
$$f(x) = 2x + 5$$

3.
$$\frac{f(x+h) - f(x)}{h} = \frac{2h}{h} = 2$$

The difference quotient provides a formula to find the **average local gradient** at any given point.

