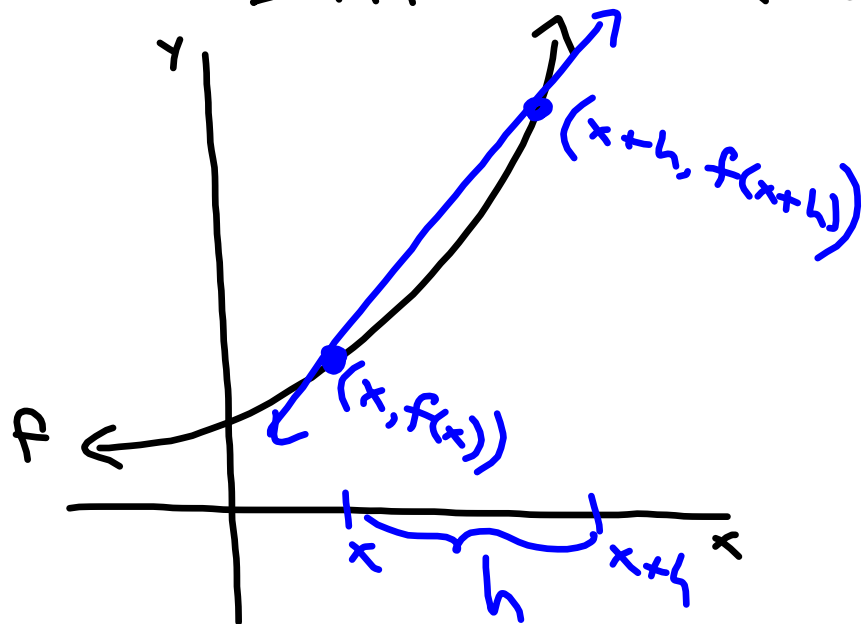


Jan. 18, 2017

Sect. 2-6

Difference Quotient
(Slope)

Difference Quotient



Find the DQ
of f .

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

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

Find the DQ of $f(x) = x^2 + 1$

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

$$f(x+h) = (x+h)^2 + 1$$

$$x^2 + 2hx + h^2 + 1$$

$$DQ = \frac{[x^2 + 2hx + h^2 + 1] - [x^2 + 1]}{x+h - x}$$

$$= \frac{2hx + h^2}{h} = \frac{2x+h}{1}$$

$$DQ = 2x+h$$