$$\lim_{h \to 0} \frac{F(x+h) - F(x)}{h}.$$

$F(x) = 3x + 2$

$(a+b)^2 = a^2 + 2ab + b^2$

$F(x+h) = 3(x+h) + 2$

$F(x) = 4x^2 + x + 3$

$F(x+h) = 16(x+h)(x+h) + 3$

$16x + 16h + x + h + 3$

TITULO FECHA

★ $F(x) = 2x - 4$

$6(x) = 2x - 4$

$F(x+h) = 2(x+h) - 4$

$2(x+h) - 1 - 2x + 4$

$\frac{2x + 2h - 4 - 2x + 4}{h}$

$\frac{2h}{h} = 2$

★ $F(x) = 3x + 5$

○ $F(x) = 3x + 5$

○ $F(x+h) = 3(x+h) + 5$

★ $F(x) = 2x - 4$

$F(x) = 2x - 4$

$F(x+h) = 2x$

$\frac{3(x+h) + 5 - 3x - 5}{h}$

$\frac{3x + 3h + 5 - 3x - 5}{h}$

$\frac{3h}{h} = 3.1$

★ $F(x) = 2x^3 + 2x^2 + 3x + 2$

$F(x+h) = 2(x^3 + 3xh + 3h^2 + h^3) + 2(x^2 + 2xh + h^2) + 3x + 3h + 2$

$\frac{2x^3 + 6x^2h + 6xh^2 + 2h^3 + 3x + 3h + 2 - 2x^3 - 2x^2 - 3x - 2}{h}$

TITULO FECHA

$6x^2h + 6xh^2 + 2h^3 + 4xh + 2h^2 + 3h$

$h(6x^2 + 6xh + 2h^2 + 4x + 2h + 3) = 6x^2 + 6xh + 2h^2 + 0$

$4x + 2h + 3$ $\quad h$

$6x^2 + 6x(0) + 2(0)^2 + 4x + 2(0) + 3$

$6x^2 + 4x + 3.$

★ $F(x) = 2x^2 + 5x + 10$

$F(x+h) = 2(x+h)^2 + 5(x+h) + 10$

$2(x^2 + 2xh + h^2) + 5x + 5h + 10.$

$2x^2 + 4xh + 2h^2 + 5x + 5h + 10$

$\underline{2x^2 + 4xh + 2h^2 + 5x + 5h + 10 - 2x^2 - 5x - 10}$

h

$\frac{4xh + 2h^2 + 5h}{h} \Rightarrow h\,\frac{4x + 2h + 5}{h} = 4x + 2h + 5$

$4x + 5.$

★ $F(x) = 5x^2 + 3x + 5.$

$5(x+h)^2 + 3(x+h) + 5$

$5(x^2 + 2xh + h^2) + 3x + 3h + 5.$

$5x^2 + 10xh + 5h^2 + 3x + 3h + 5$

$\underline{5x^2 + 10xh + 5h^2 + 3x + 3h + 5 - 5x^2 - 3x - 5.}$

h

$\frac{10xh + 5h^2 + 3h}{h} = h(10x + 5h + 3)$

h

$10x + 5 \cdot h + 5 = 10x + 5(0) + 3 = 10x + 3.$