

$$f := x \rightarrow \frac{(x+2)}{x-3}$$

$$f := x \mapsto \frac{x+2}{x-3} \quad (1)$$

$$fp := D(f)$$

$$fp := x \mapsto \frac{1}{x-3} - \frac{x+2}{(x-3)^2} \quad (2)$$

$$\text{combine}(\%)$$

$$x \mapsto \frac{1}{x-3} - \frac{x+2}{(x-3)^2} \quad (3)$$

$$\text{normal}(\%)$$

$$x \mapsto \frac{1}{x-3} - \frac{x+2}{(x-3)^2} \quad (4)$$

$$\text{simplify}(\%)$$

$$x \mapsto \frac{1}{x-3} - \frac{x+2}{(x-3)^2} \quad (5)$$

$$fp := x \rightarrow \frac{(2 \cdot x - 1)}{(x-3)^2}$$

$$fp := x \mapsto \frac{2x-1}{(x-3)^2} \quad (6)$$

Tangent line at $x = 5$

$$L := x \rightarrow fp(5) \cdot (x-5) + f(5)$$

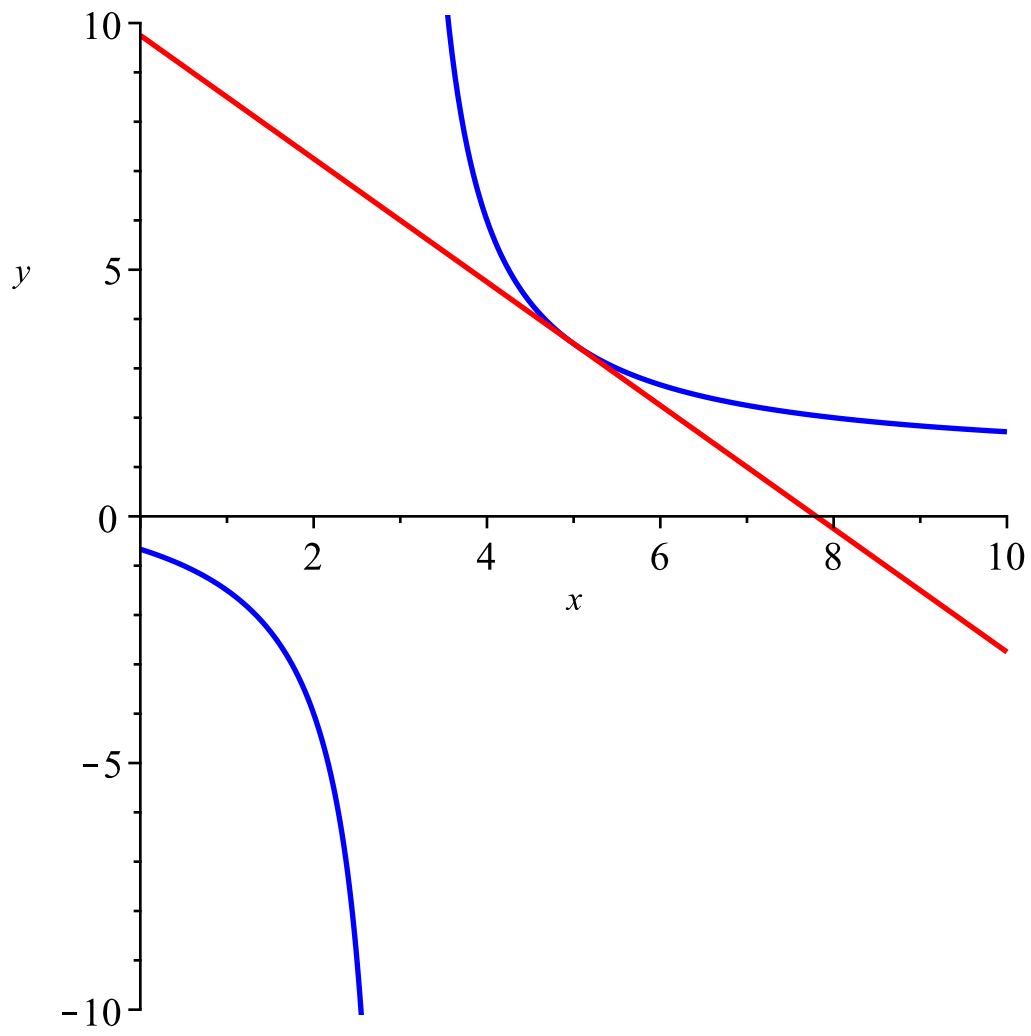
$$L := x \mapsto fp(5) (x-5) + f(5) \quad (7)$$

$$L(x)$$

$$-\frac{5x}{4} + \frac{39}{4} \quad (8)$$

with(plots) :

plot([f(x), L(x)], x=0..10, y=-10..10, thickness=[2, 2], color=[blue, red], discontinuous=true)



$f'(5)$

$$-\frac{5}{4}$$

(9)

$f(5)$

$$\frac{7}{2}$$

(10)