

Exercise 1

$$f(x) := x^3 + a \cdot x^2 + b \cdot x + c$$

Terminé

$$ff(x) := \frac{d}{dx}(f(x))$$

Terminé

$$\text{solve} \left(\begin{cases} f(1) = f(-1) + 4 \\ ff(3) = 10 \\ \int_0^2 f(x) dx = -8 \end{cases}, \{a, b, c\} \right)$$

$$a = -3 \text{ and } b = 1 \text{ and } c = -3$$

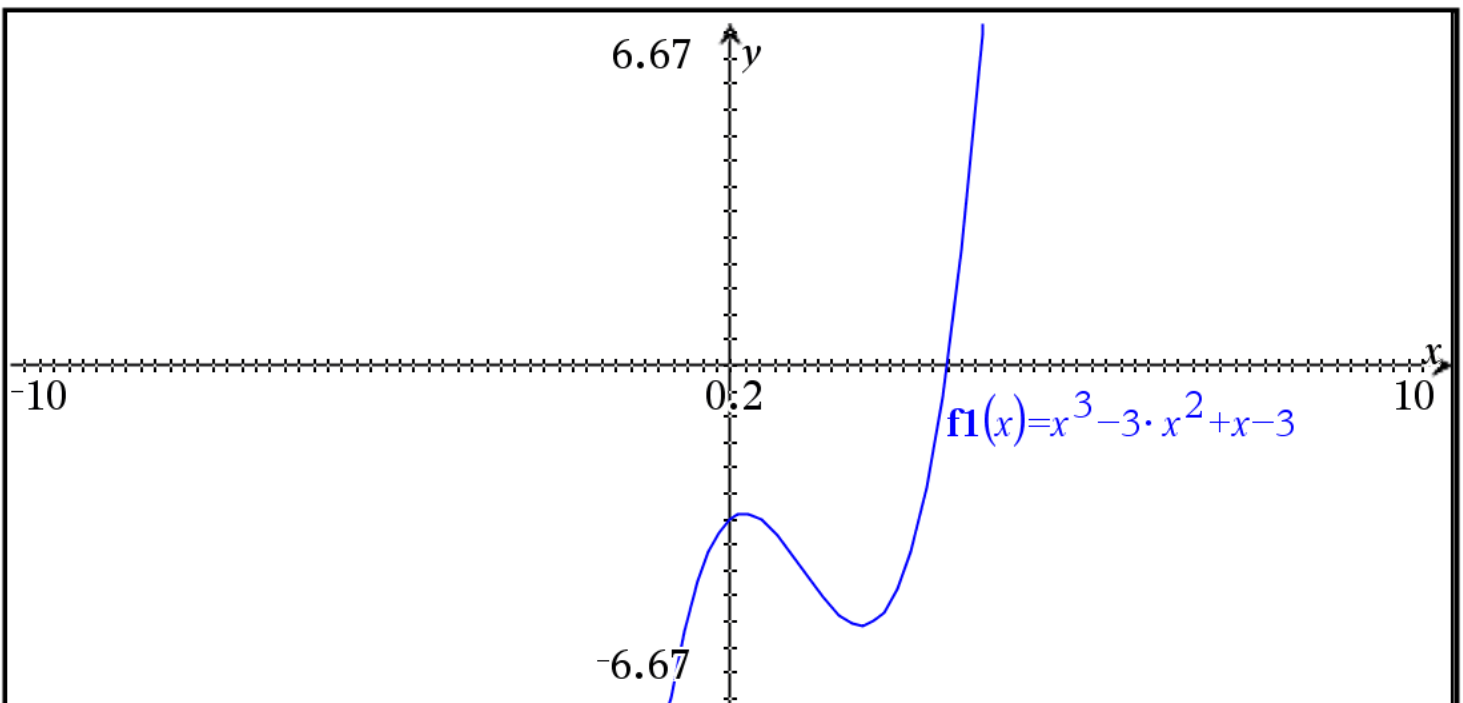
$$\text{solve}(f'(x) = 0, x)$$

$$x = 3$$

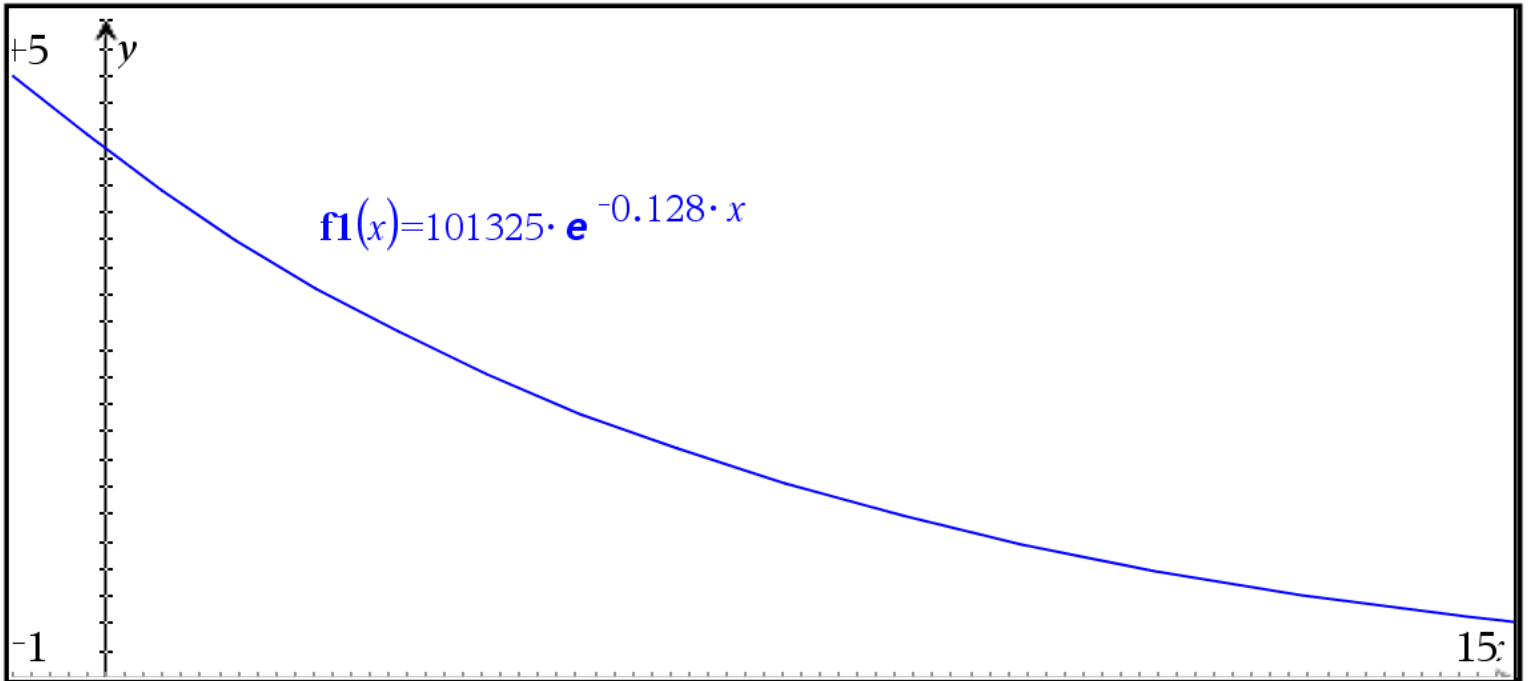
$$\text{tangentLine}(f'(x), x, 3)$$

$$10 \cdot x - 30$$

□



Exercise 2



$f_1(2)$	78518.4
$f_1(5)$	53561.6
$\frac{f_1(5)}{101325} \cdot 100$	52.8612
$\text{solve}(f_1(x)=1865, x)$	$x=31.3339$
<input type="checkbox"/>	

Exercise 3

$$0.4 \cdot 0.25 + 0.6 \cdot 0.5 = 0.4$$

$$\text{binomPdf}(10, 0.4, 5) = 0.200658$$

$$\text{binomCdf}(10, 0.4, 2, 10) = 0.953643$$

$$\text{binomCdf}(10, 0.4, 4, 7) = 0.605425$$

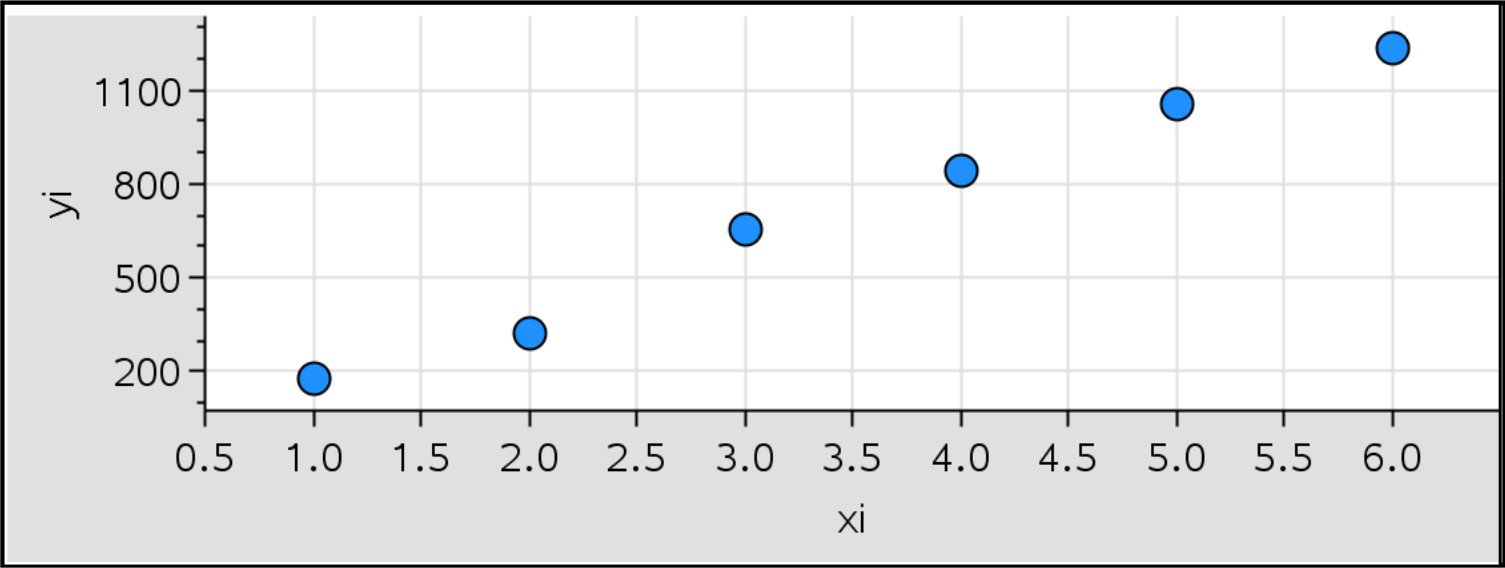
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Exercice 4

Droite de régression par la méthode des moindres carrés

	A xi	B yi	C	D
=				=LinRegMx(xi,yi,1):
1	1	180	Titre	Linear Regression ...
2	2	320	RegEqn	m*x+b
3	3	650	m	218.
4	4	840	b	-51.3333
5	5	1050	r ²	0.990693
6	6	1230	r	0.995335
7			Resid	{13.3333333333333...}
8				
9				

Nuage de point



Calculs pour la droite de Meyer

	xi1	F yi1	G	H	I xi2	J yi2	K	L
=				=TwoV				=TwoVar
1	1	180	Titre	Two-...	4	840	Titre	Two-Va..
2	2	320	\bar{x}	2.	5	1050	\bar{x}	5.
3	3	650	Σx	6.	6	1230	Σx	15.
4			Σx^2	14.			Σx^2	77.
5			$s_x := \dots$	1.			$s_x := \dots$	1.
6			$\sigma_x := \dots$	0.81...			$\sigma_x := \dots$	0.8164...
7			n	3.			n	3.
8			\bar{y}	383....			\bar{y}	1040.

$$\text{solve}\left(\begin{cases} 383.3=2 \cdot a+b \\ 1040=5 \cdot a+b \end{cases}, \{a,b\}\right)$$

$$a=218.9 \text{ and } b=-54.5$$

$$218 \cdot 11 - 51.3$$

$$2346.7$$

$$218.9 \cdot 11 - 54.5$$

$$2353.4$$

$$\text{solve}(218 \cdot x - 51.3 = 3000, x)$$

$$x=13.9968$$

