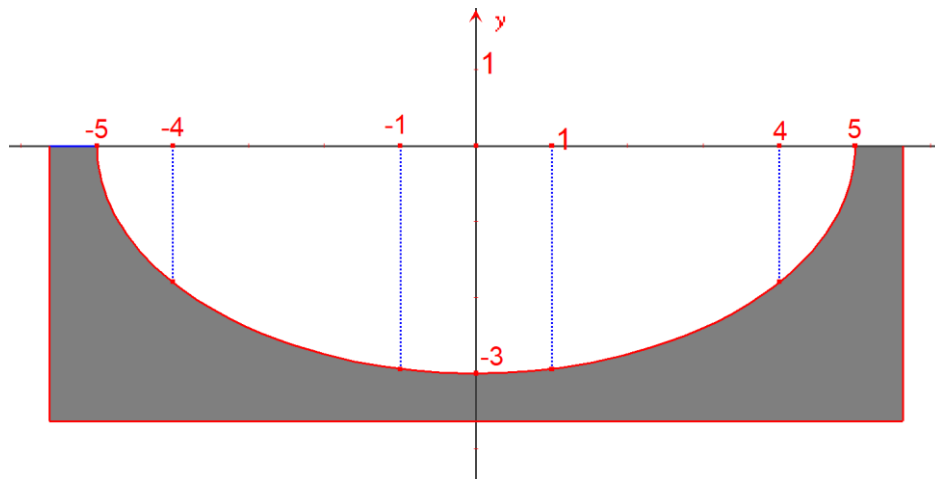


La secció d'una pista de skateboard té forma de semiel·lipse, com mostra la figura.



- Calculeu el pendent de la recta tangent $x = -1.5, -1, 0, 1, 1.5$
- Compareu els pendents de les rectes tangents en x i $-x$

Solució:

La semiel·lipse té semieix major $a = 5$ i semieix menor $b = 3$.

L'equació de l'el·lipse és:

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$$

$$\frac{x^2}{5^2} + \frac{y^2}{3^2} = 1$$

$$9x^2 + 25y^2 = 225$$

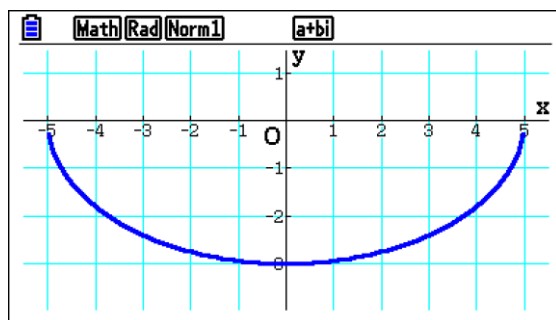
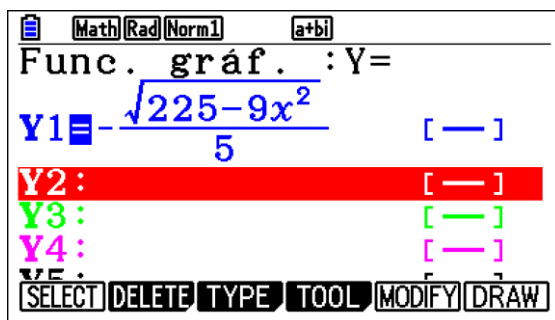
$$y = \pm \frac{\sqrt{225 - 9x^2}}{5}$$

L'equació de la semiel·lipse és:

$$y = -\frac{\sqrt{225 - 9x^2}}{5}$$

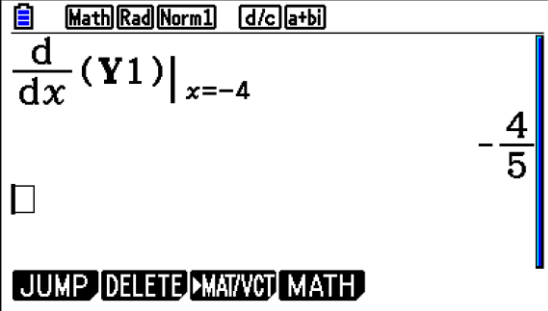
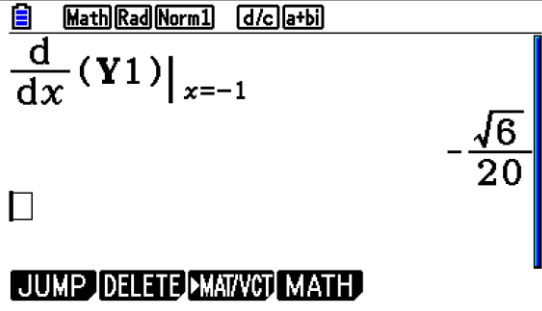
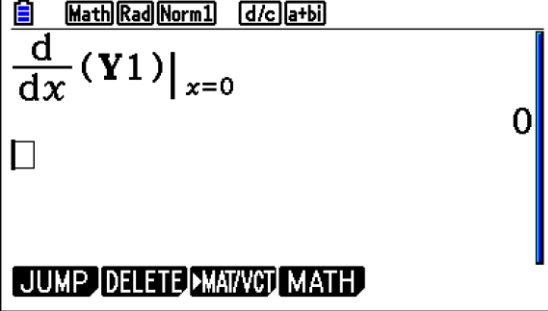
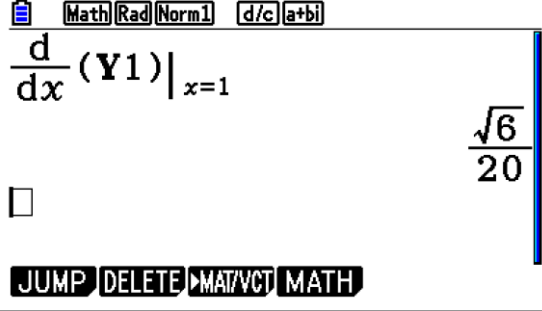
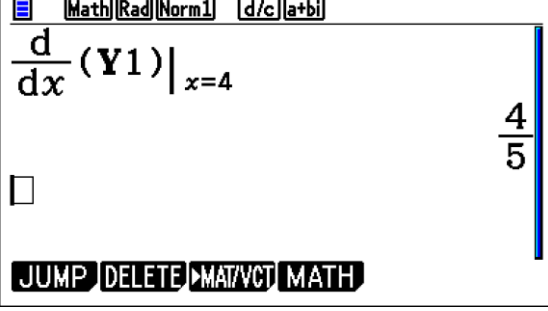
Obrim el *Menú Gráfico*.

Definim i representem la funció semiel·lipse.



Obrim el *Menú Ejec-Mat*

Calculem $y'(-4), y'(-1), y'(0), y'(1), y'(4)$

 <p>$\frac{d}{dx}(Y1) _{x=-4}$</p> <p>$-\frac{4}{5}$</p> <p>JUMP DELETED ▶ MAT/VCT MATH</p>	 <p>$\frac{d}{dx}(Y1) _{x=-1}$</p> <p>$-\frac{\sqrt{6}}{20}$</p> <p>JUMP DELETED ▶ MAT/VCT MATH</p>
 <p>$\frac{d}{dx}(Y1) _{x=0}$</p> <p>0</p> <p>JUMP DELETED ▶ MAT/VCT MATH</p>	 <p>$\frac{d}{dx}(Y1) _{x=1}$</p> <p>$\frac{\sqrt{6}}{20}$</p> <p>JUMP DELETED ▶ MAT/VCT MATH</p>
 <p>$\frac{d}{dx}(Y1) _{x=4}$</p> <p>$\frac{4}{5}$</p> <p>JUMP DELETED ▶ MAT/VCT MATH</p>	

Notem que

$$y'(-4) = -\frac{4}{5}, y'(4) = \frac{4}{5}, y'(-1) = -\frac{\sqrt{6}}{20}, y'(1) = \frac{\sqrt{6}}{20}, y'(0) = 0$$

$$y'(-x) = -y'(x)$$