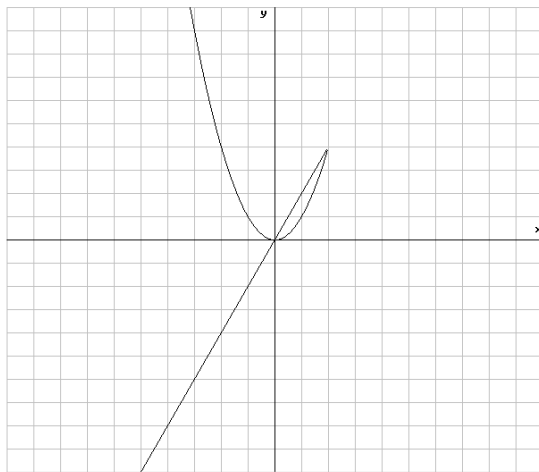
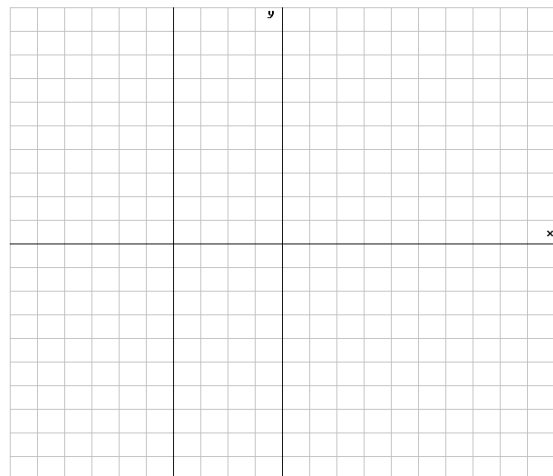

Tema 8: Funciones: Rectas e Hipérbolas.

1.- Justifica razonadamente si las siguientes gráficas corresponden o no con la gráfica de una función:

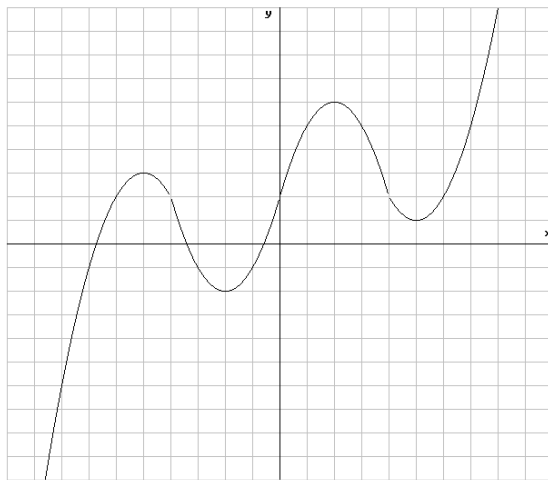
a)



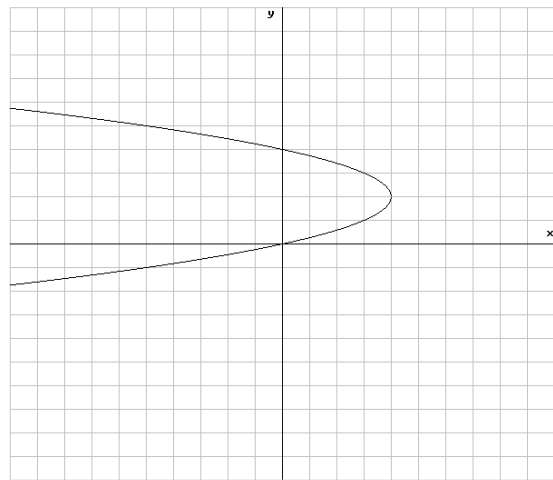
b)



c)



d)



2.- Representa gráficamente las siguientes funciones lineales, indicando e interpretando la pendiente de cada una de ellas:

a) $y = -\frac{3}{5}x$

b) $y = 5x$

c) $y = \frac{1}{3}x$

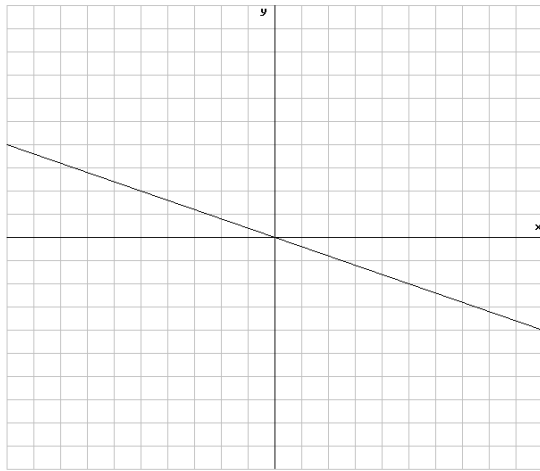
d) $y = -2x$

e) d) $y = -\frac{2}{7}x$

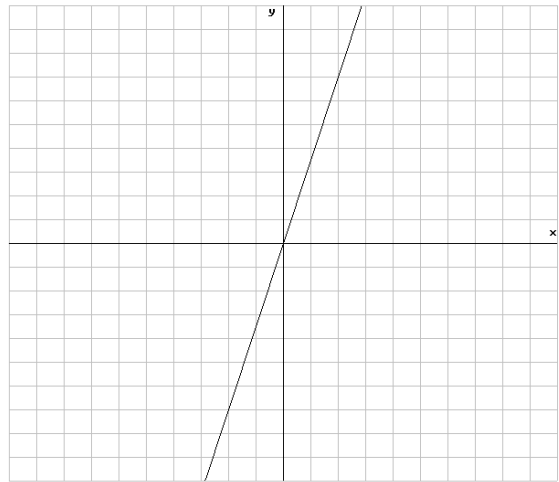
f) d) $y = \frac{5}{2}x$

3.- Calcula la ecuación de las siguientes rectas:

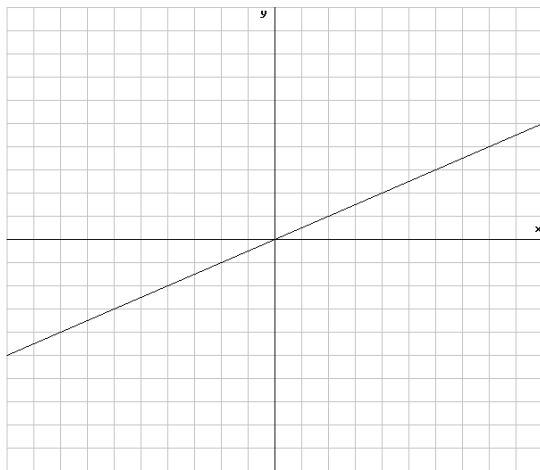
a)



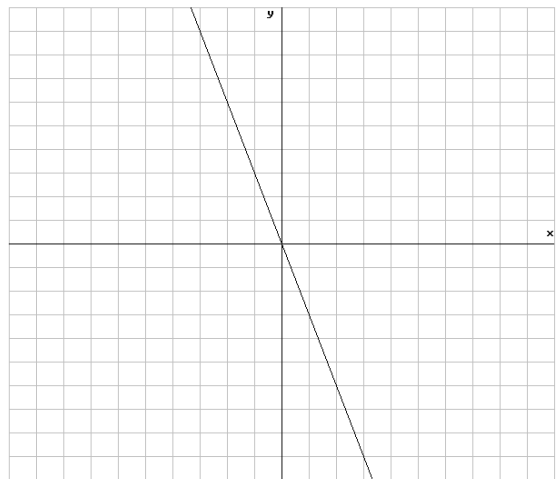
b)



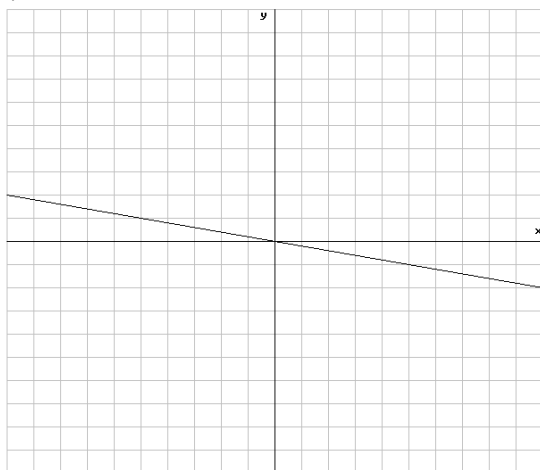
c)



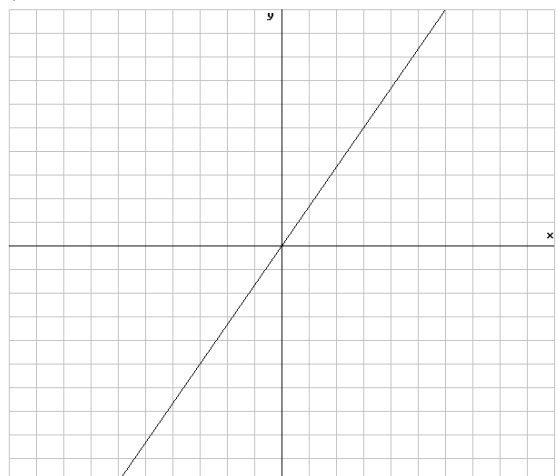
d)



e)



f)



4.- Representa gráficamente las siguientes funciones afines, indicando e interpretando la pendiente de cada una de ellas:

a) $y = -x - 3$

b) $y = 4x + 1$

c) $y = -\frac{2}{3}x + 1$

d) $y = \frac{1}{5}x - 2$

e) $y = -2x + 3$

f) $y = \frac{5}{6}x - 7$

g) $y = \frac{7}{3}x - 4$

h) $y = -\frac{2}{7}x + 1$

i) $y = x - 4$

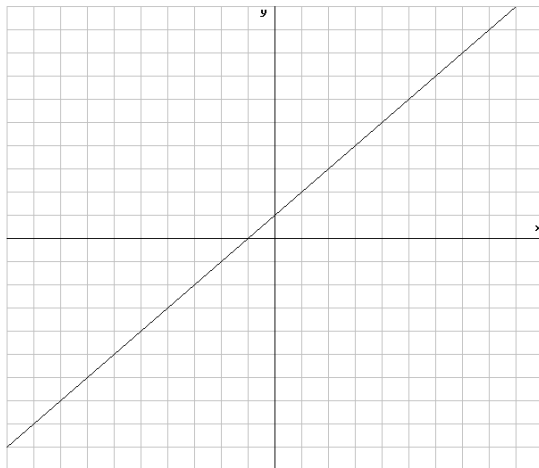
j) $y = -5x + 3$

k) $y = -\frac{1}{2}x + 1$

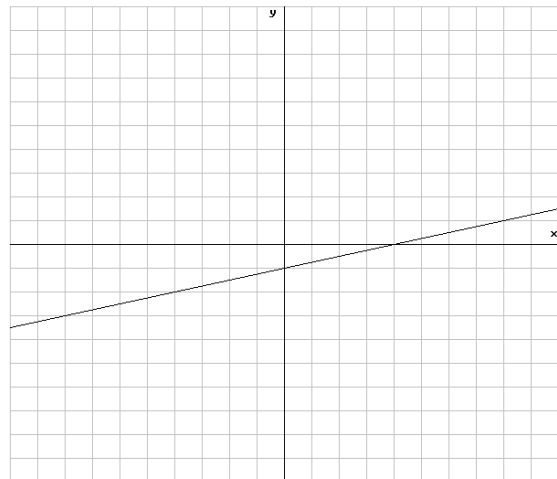
l) $y = \frac{5}{4}x - 2$

5.- Calcula la ecuación de las siguientes rectas:

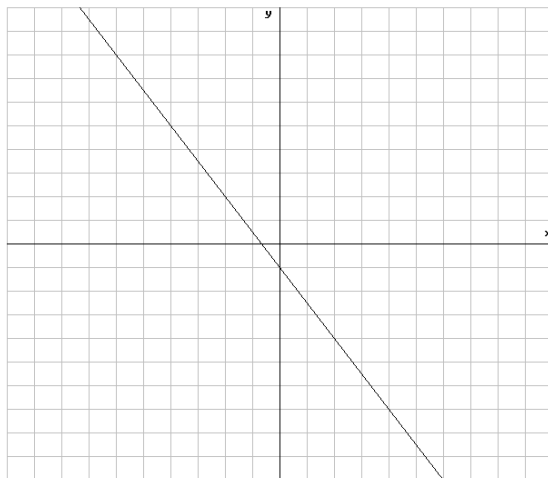
a)



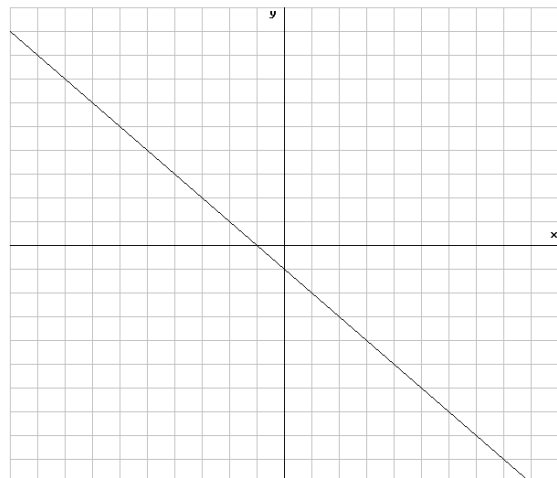
b)



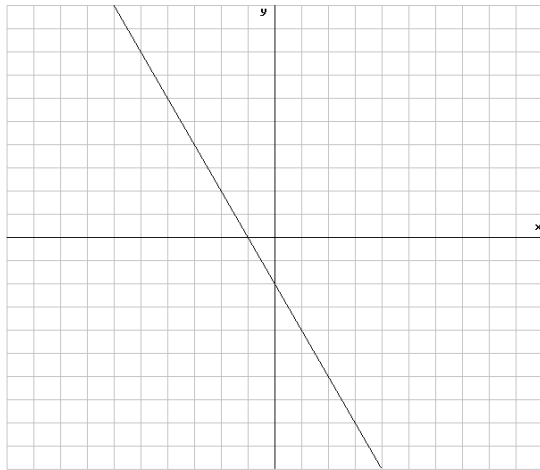
c)



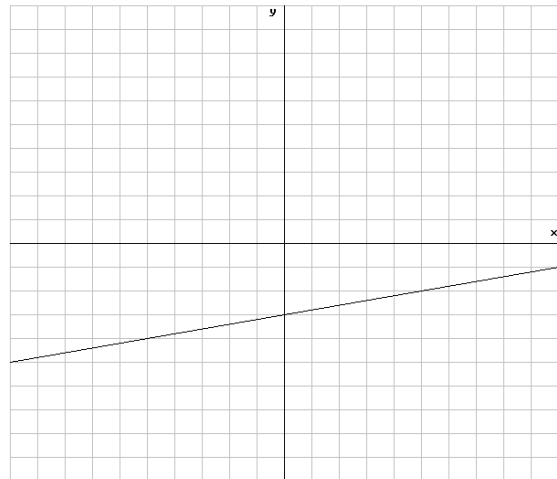
d)



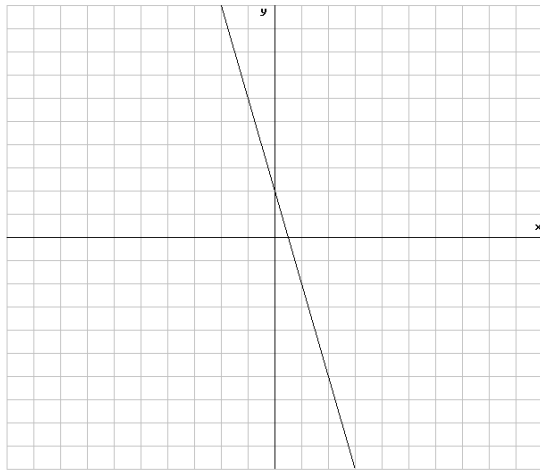
e)



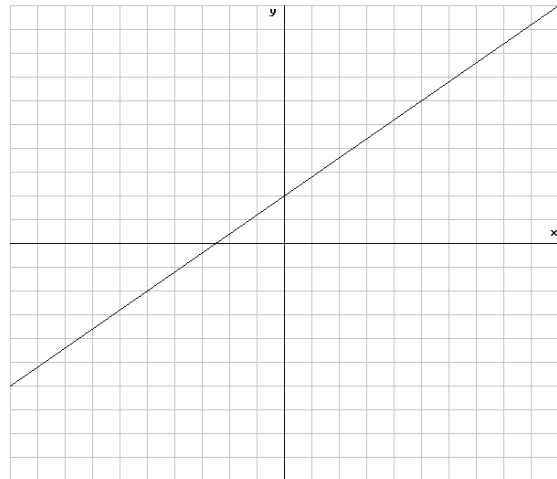
f)



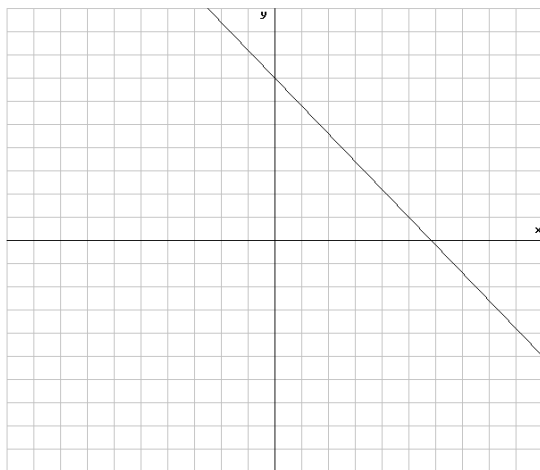
g)



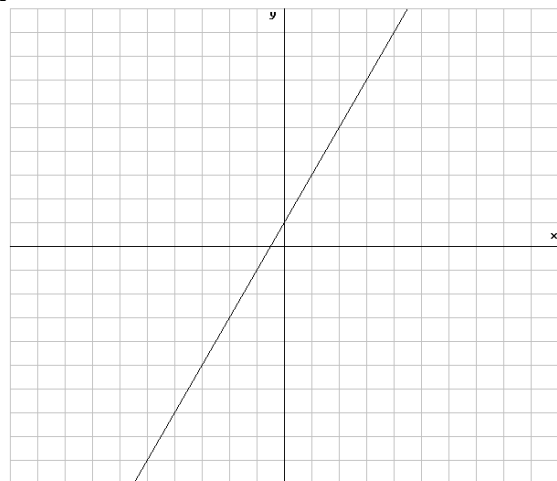
h)



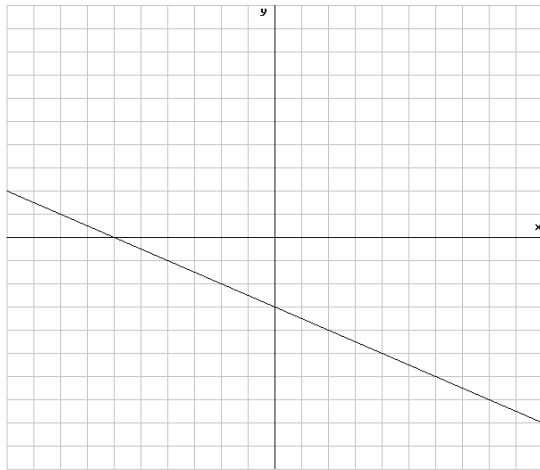
i)



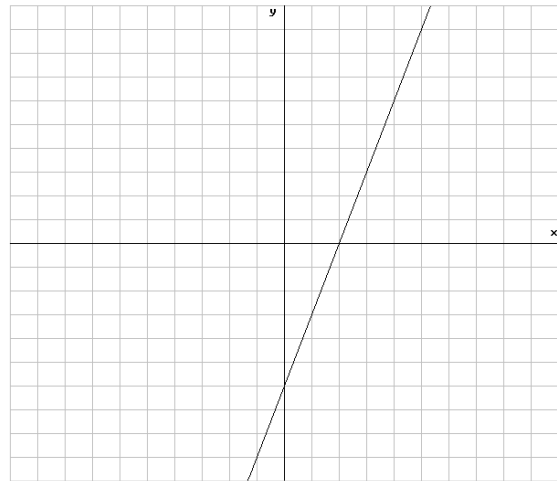
j)



k)



l)



6.- Representa gráficamente las siguientes funciones, clasificándolas:

a) $y = -3$

b) $x = 7$

c) $x = -1$

d) $y = 2$

e) $x = -4$

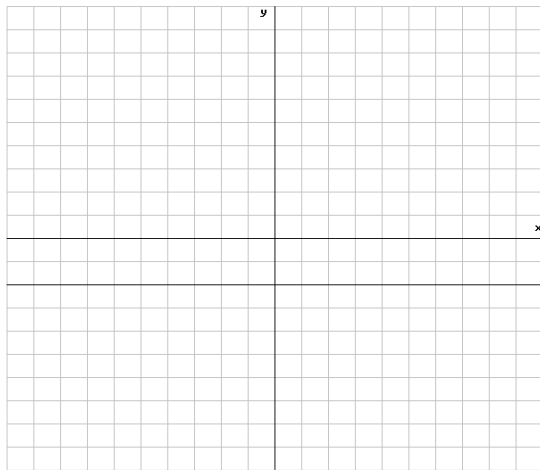
f) $y = -5$

g) $y = 3$

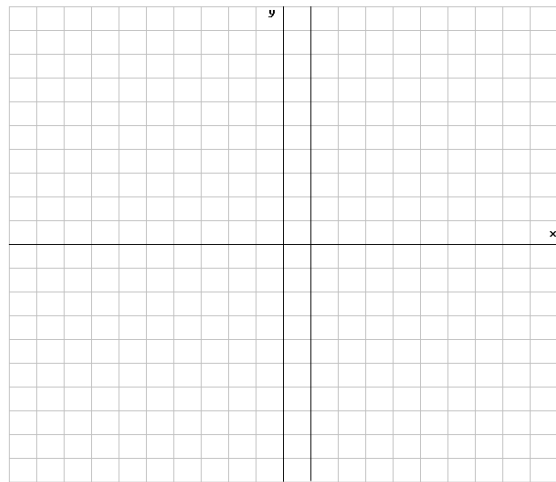
h) $x = 2$

7.- Calcula la ecuación de las siguientes rectas:

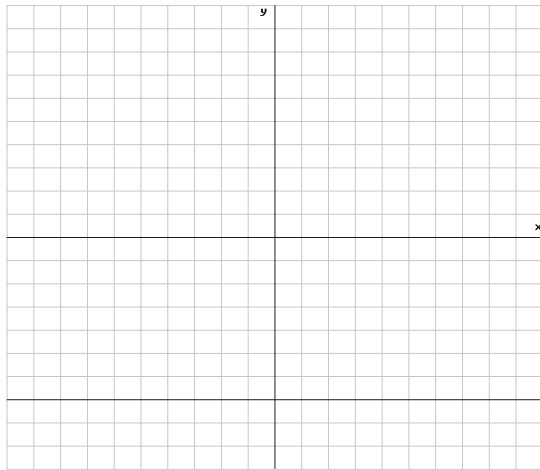
a)



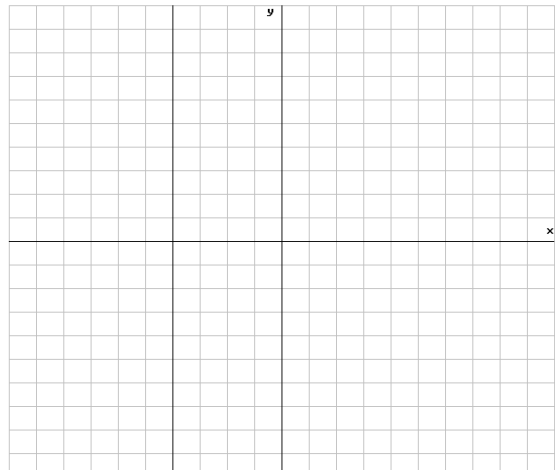
b)



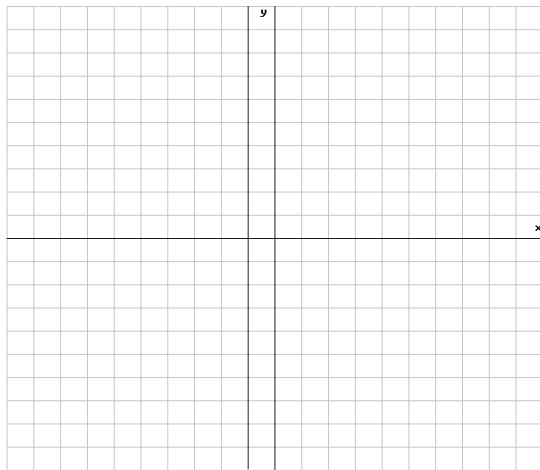
c)



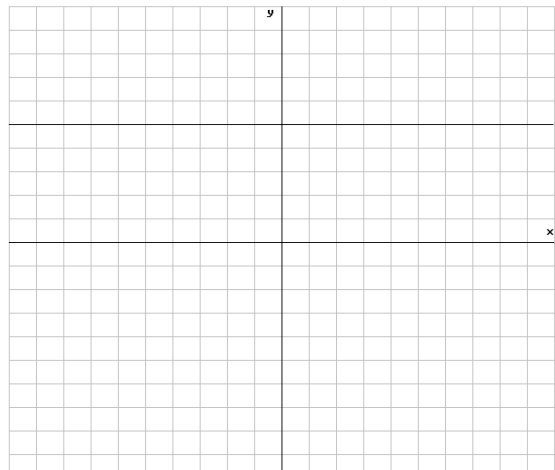
d)



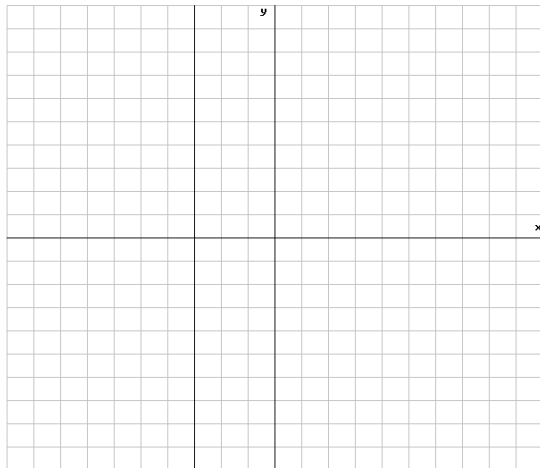
e)



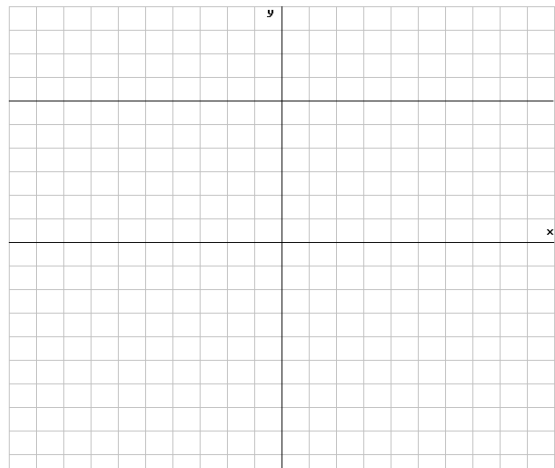
f)



g)



h)



8.- Halla la ecuación de la recta paralela a:

a) $y = -2x - 3$ y pasa por el punto $A(1,4)$

b) $y = \frac{1}{5}x + 9$ y pasa por el punto $B(5,1)$

9.- Representa gráficamente las siguientes funciones, clasificándolas:

a) $y = \frac{10}{x}$

b) $y = -\frac{4}{x}$

c) $y = -\frac{3}{x}$

d) $y = -\frac{1}{x}$

e) $y = \frac{9}{x}$

f) $y = \frac{2}{x}$

g) $y = -\frac{6}{x}$

h) $y = -\frac{2}{x}$

i) $y = \frac{3}{x}$

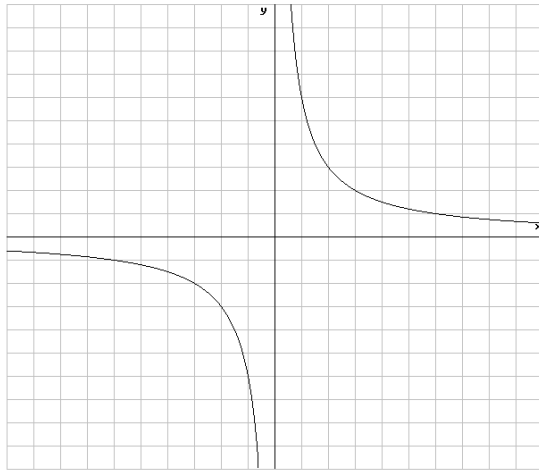
j) $y = \frac{4}{x}$

k) $y = \frac{8}{x}$

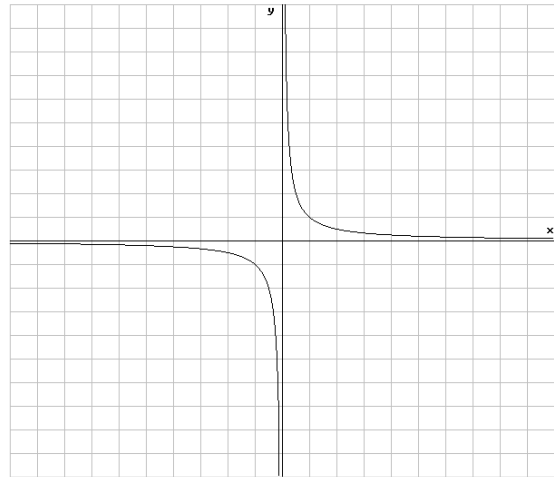
l) $y = -\frac{8}{x}$

10.- Calcula la ecuación de las siguientes hipérbolas:

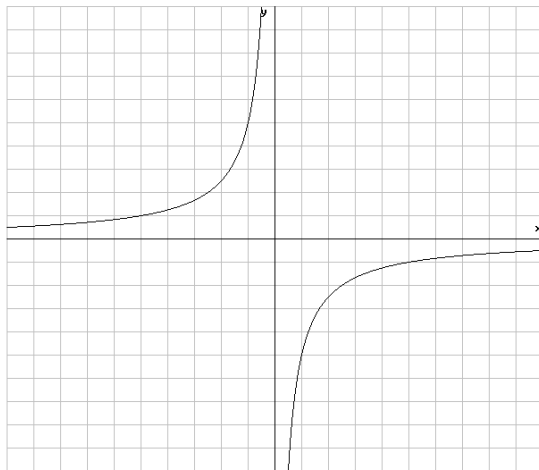
a)



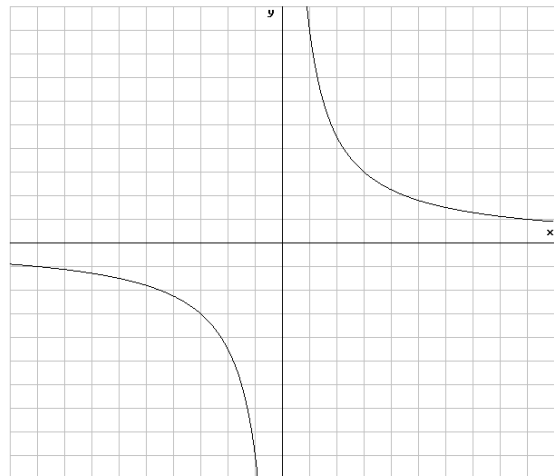
b)



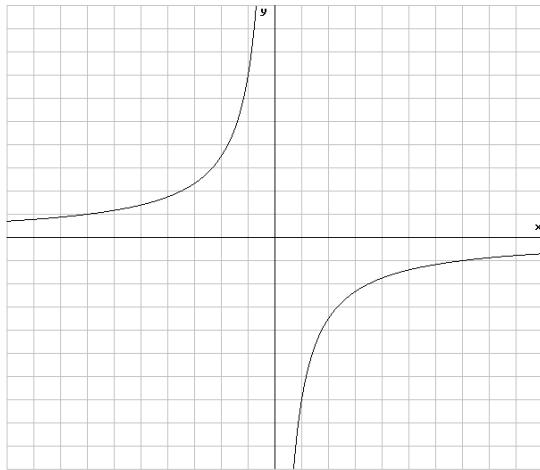
c)



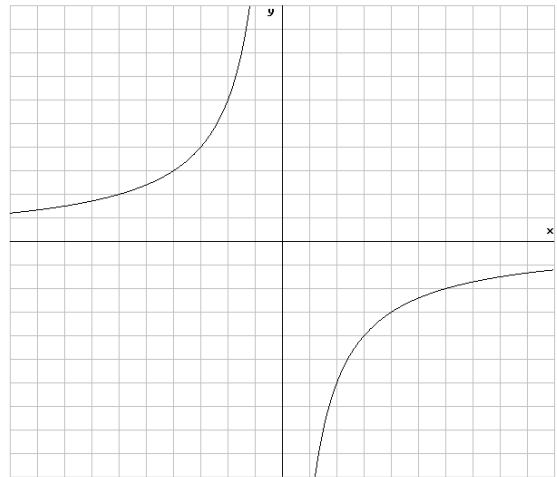
d)



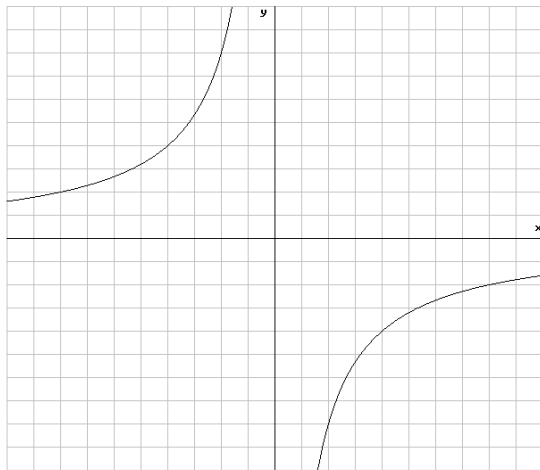
e)



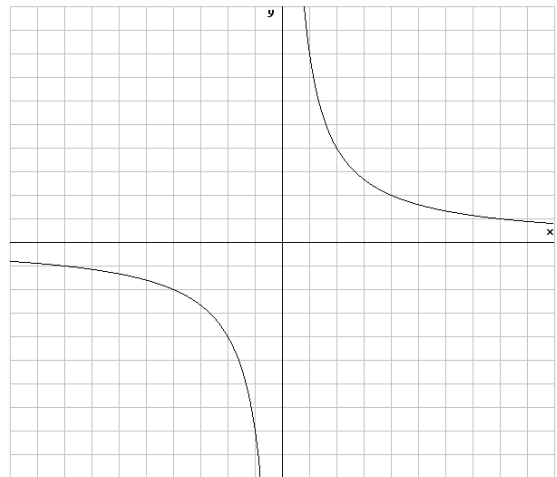
f)



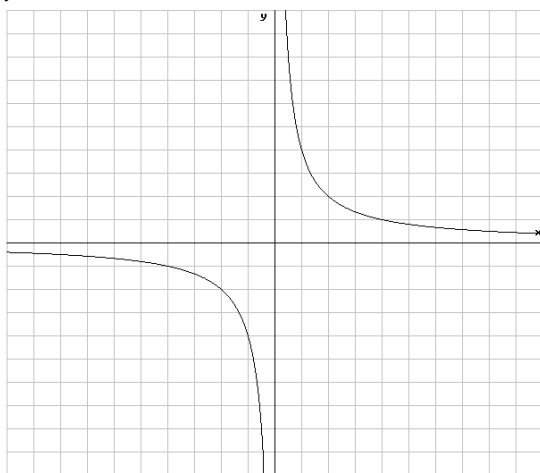
g)



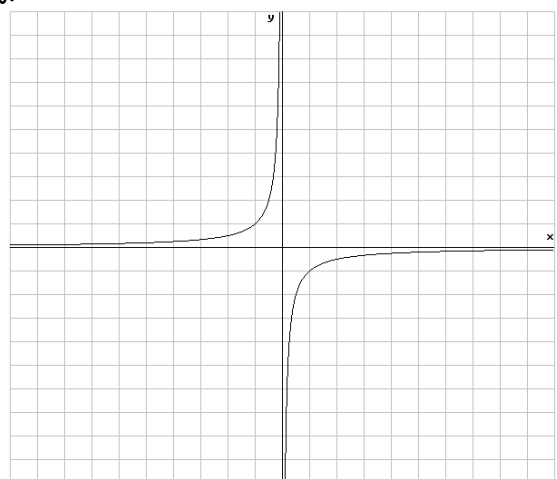
h)



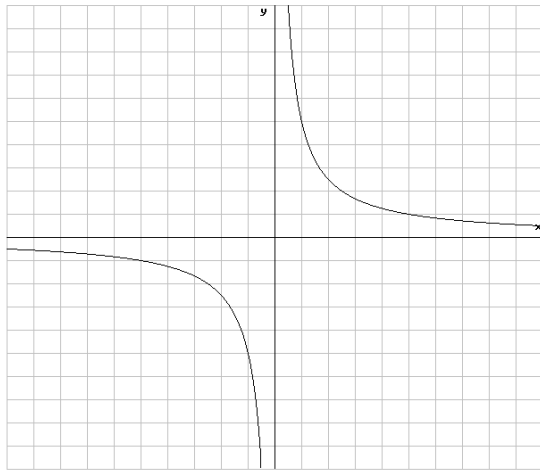
i)



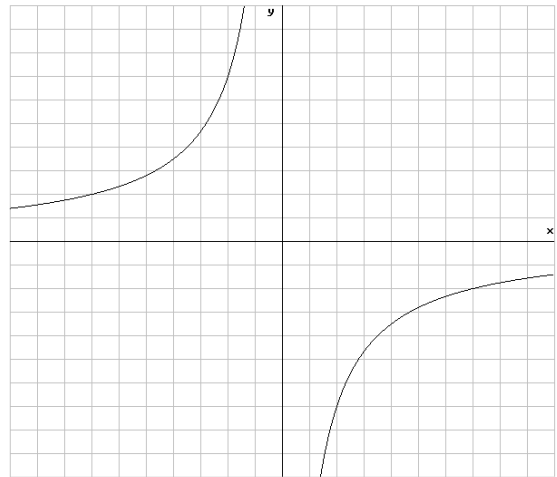
j)



k)



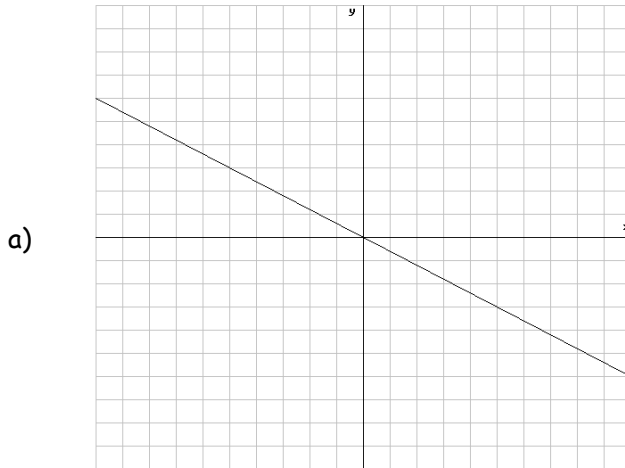
l)



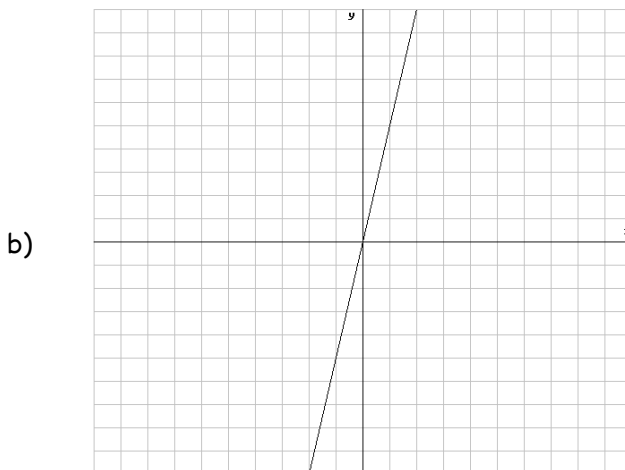
SOLUCIONES:

- 1.- a) No es función ya que para algunos valores de x hay varios valores de y .
b) No es función ya que para $x = -4$ hay infinitos valores de y .
c) Si es función ya que para cada x hay una única y .
d) No es función ya que para algunos valores de x hay varios valores de y .

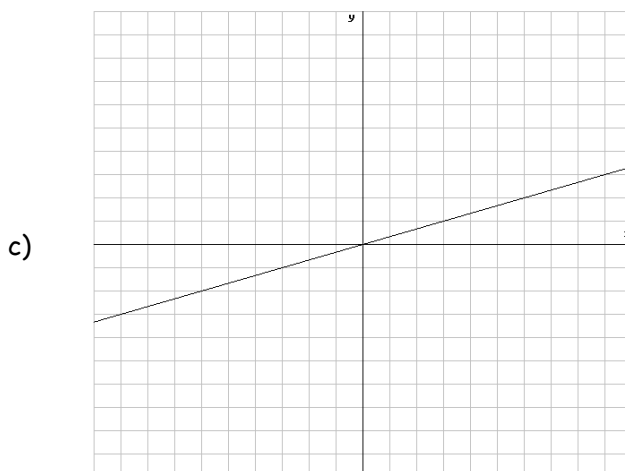
2.-



Pendiente = $m = -\frac{3}{5}$
Si x aumenta 5 unidades,
y disminuye 3 unidades.

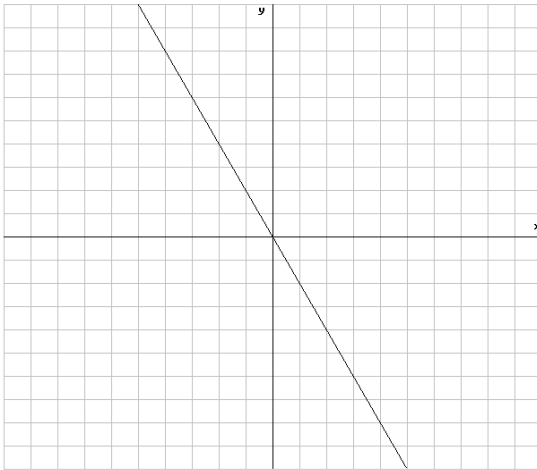


Pendiente = $m = 5$
Si x aumenta 1 unidad,
y aumenta 5 unidades.



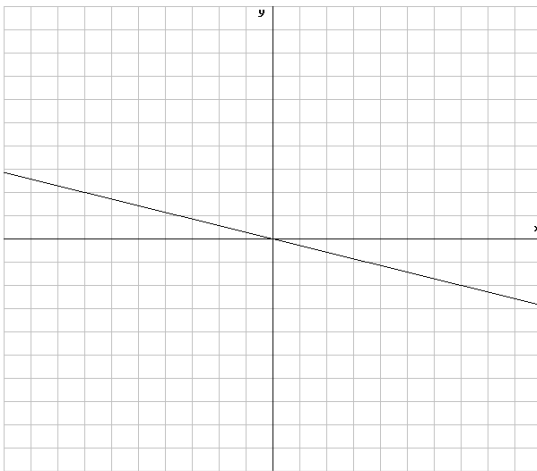
Pendiente = $m = \frac{1}{3}$
Si x aumenta 3 unidades,
y aumenta 1 unidad.

d)



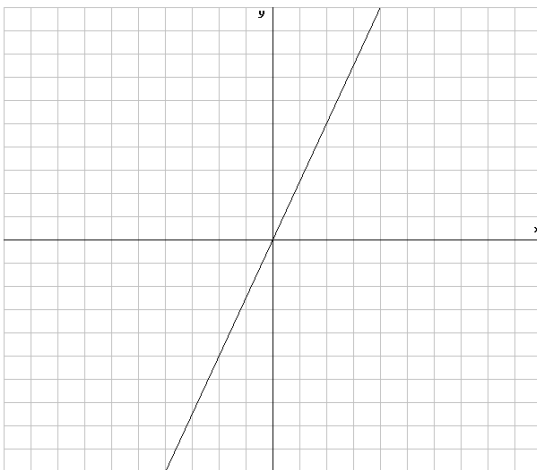
Pendiente = $m = -2$
Si x aumenta 1 unidad,
y disminuye 2 unidades.

e)



Pendiente = $m = -\frac{2}{7}$
Si x aumenta 7 unidades,
y disminuye 2 unidades.

f)



Pendiente = $m = \frac{5}{2}$
Si x aumenta 5 unidades,
y aumenta 2 unidades.

- 3.-
- a) $y = -\frac{2}{5}x$
 - b) $y = \frac{7}{2}x$
 - c) $y = \frac{1}{2}x$

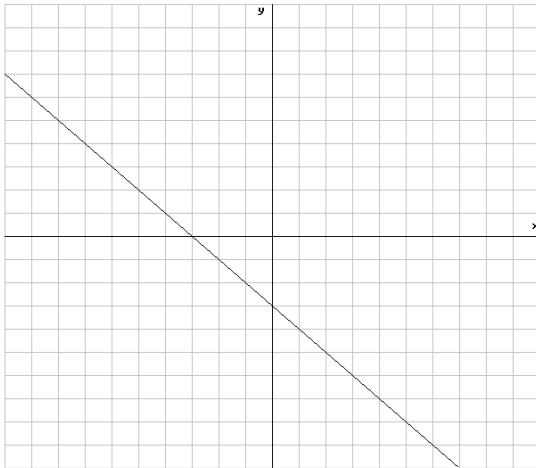
d) $y = -3x$

e) $y = -\frac{1}{5}x$

f) $y = \frac{5}{3}x$

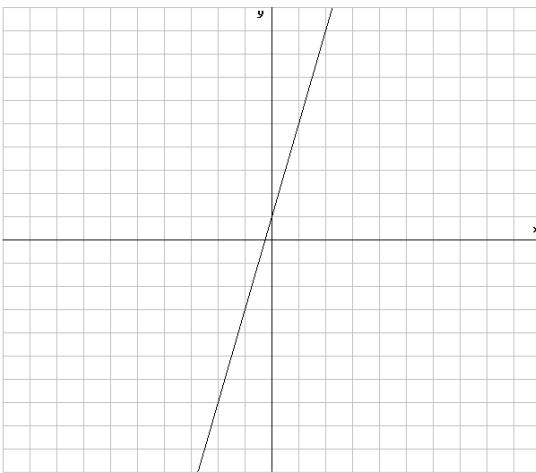
4.-

a)



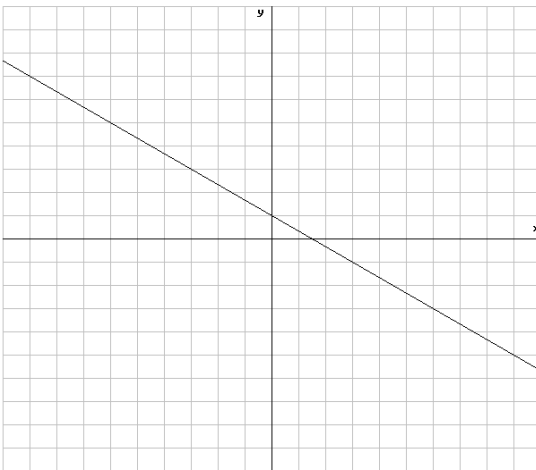
Pendiente = $m = -1$
Si x aumenta 1 unidad,
y disminuye 1 unidad.

b)



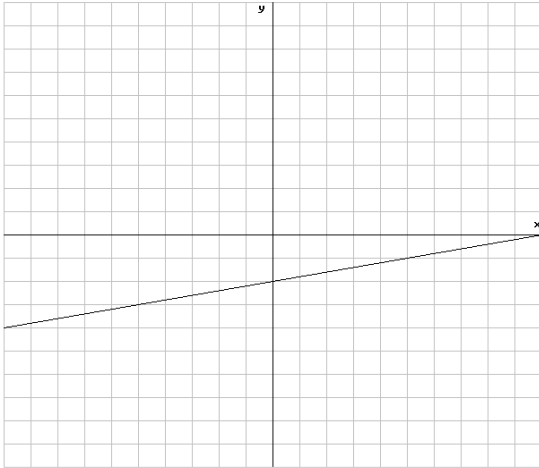
Pendiente = $m = 4$
Si x aumenta 1 unidad,
y aumenta 4 unidades.

c)



Pendiente = $m = -\frac{2}{3}$
Si x aumenta 3 unidades,
y disminuye 2 unidades.

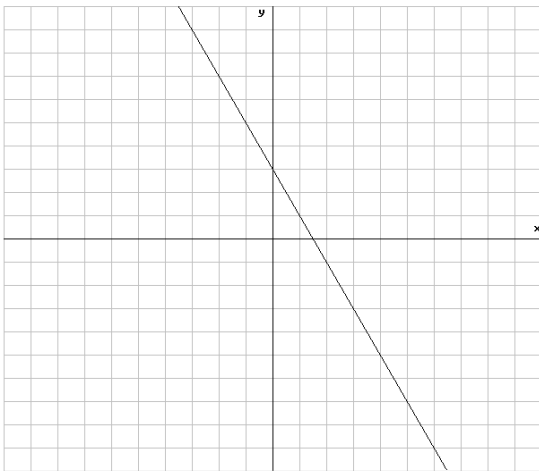
d)



$$\text{Pendiente} = m = \frac{1}{5}$$

Si x aumenta 5 unidades,
y aumenta 1 unidad.

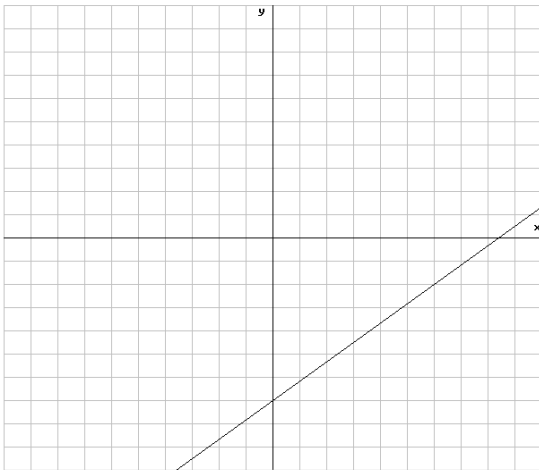
e)



$$\text{Pendiente} = m = -2$$

Si x aumenta 1 unidad,
y disminuye 2 unidades.

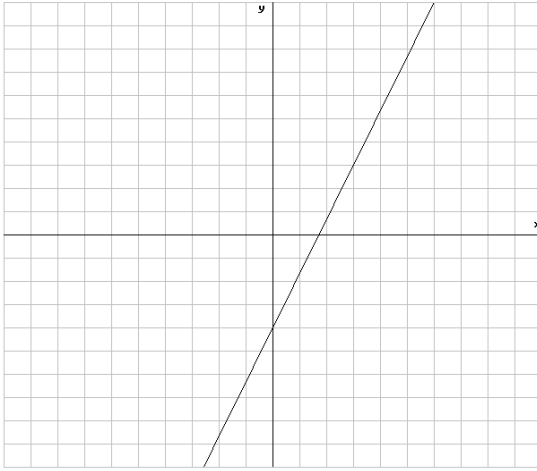
f)



$$\text{Pendiente} = m = \frac{5}{6}$$

Si x aumenta 6 unidades,
y aumenta 5 unidades.

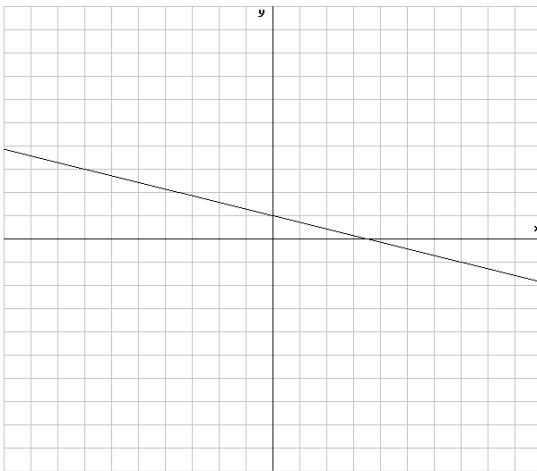
g)



$$\text{Pendiente} = m = \frac{7}{3}$$

Si x aumenta 3 unidades,
y aumenta 7 unidades.

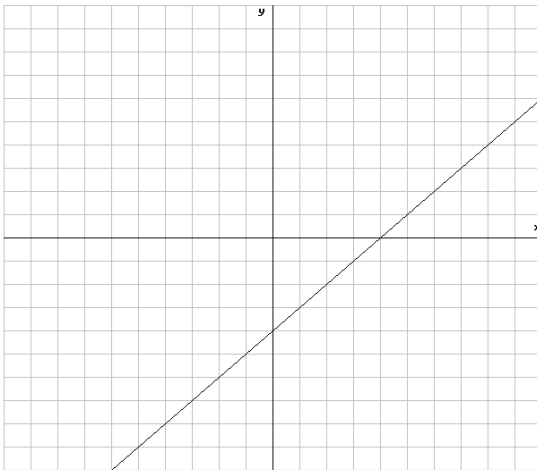
h)



$$\text{Pendiente} = m = -\frac{2}{7}$$

Si x aumenta 7 unidades,
y disminuye 2 unidades.

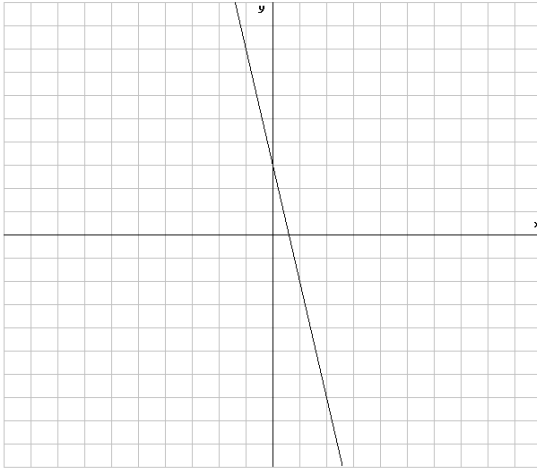
i)



$$\text{Pendiente} = m = 1$$

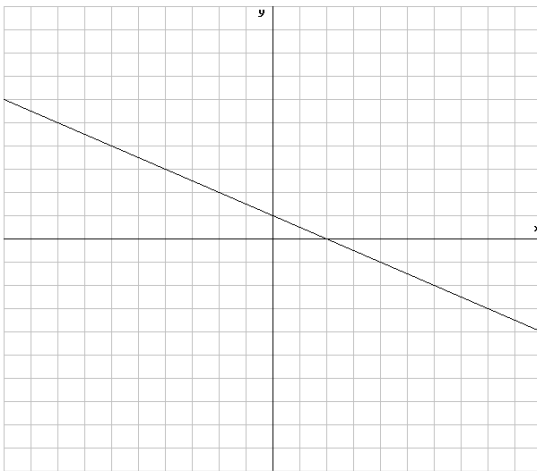
Si x aumenta 1 unidad,
y aumenta 1 unidad.

j)



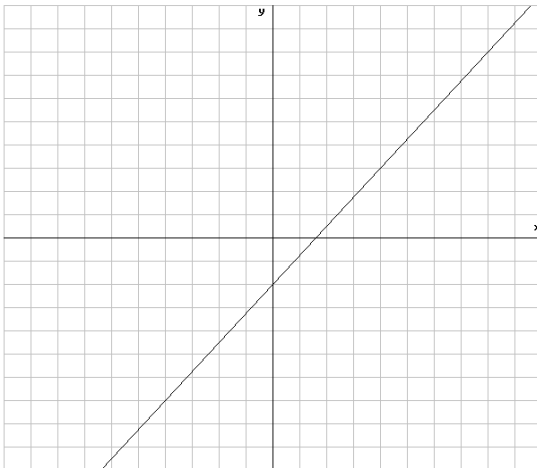
Pendiente = $m = -5$
Si x aumenta 1 unidad,
y disminuye 5 unidades.

k)



Pendiente = $m = -\frac{1}{2}$
Si x aumenta 2 unidades,
y disminuye 1 unidad.

l)



Pendiente = $m = \frac{5}{4}$
Si x aumenta 4 unidades,
y aumenta 5 unidades.

5.-

a) $y = x + 1$

b) $y = \frac{1}{4}x - 1$

c) $y = -\frac{3}{2}x - 1$

d) $y = -x - 1$

g) $y = -4x + 2$

h) $y = \frac{4}{5}x + 2$

i) $y = -\frac{6}{5}x + 7$

j) $y = 2x + 1$

e) $y = -2x - 2$

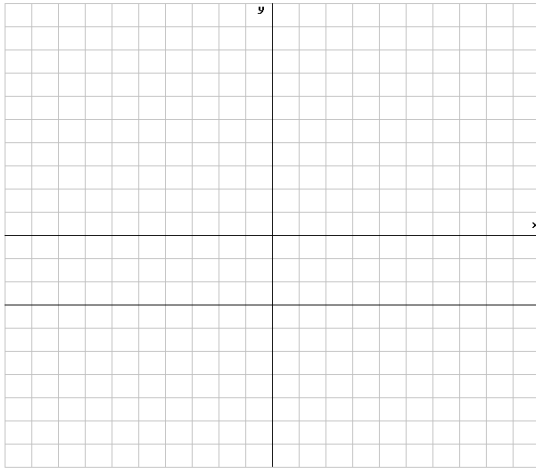
f) $y = \frac{1}{5}x - 3$

k) $y = -\frac{1}{2}x - 3$

l) $y = 3x - 6$

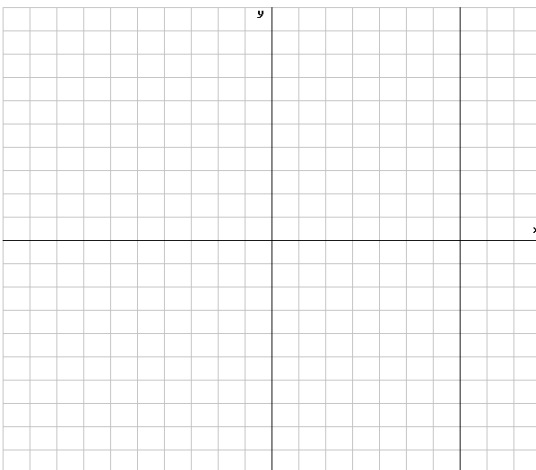
6.-

a)



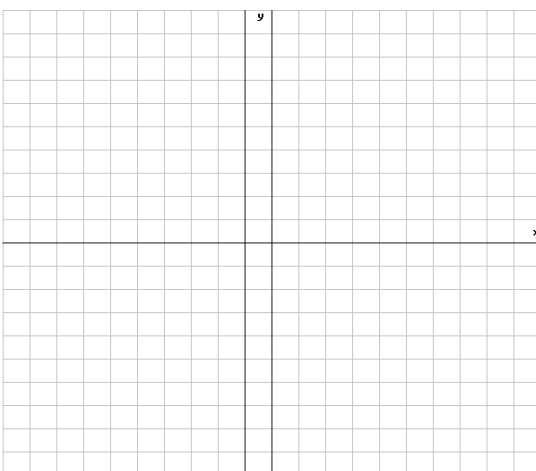
Función constante.

b)



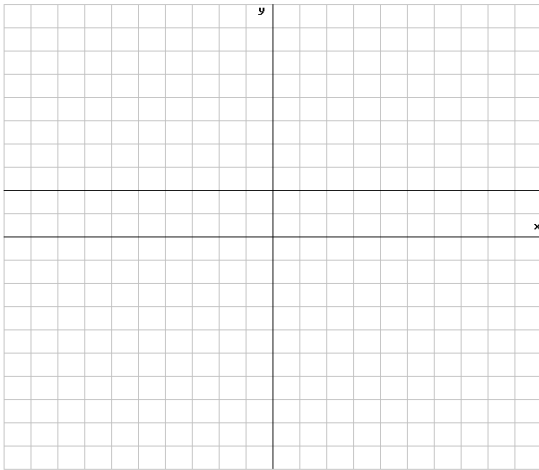
No es función.

c)



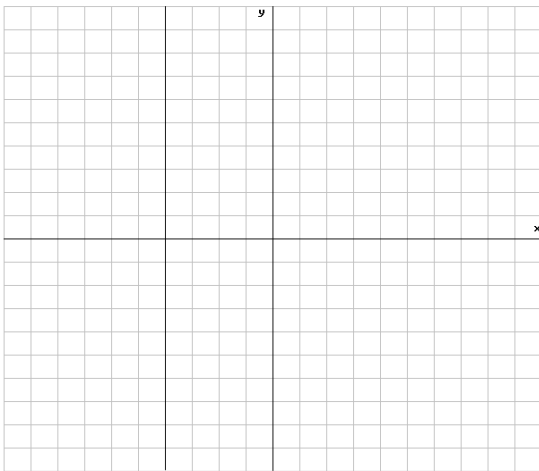
No es función.

d)



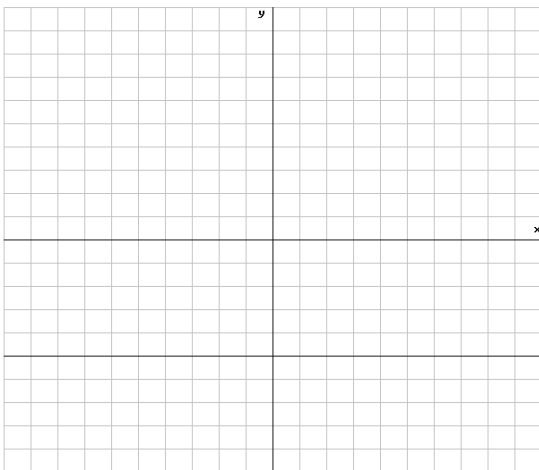
Función constante.

e)



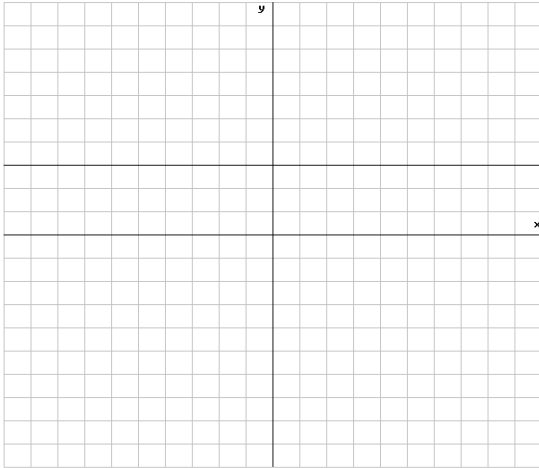
No es función.

f)



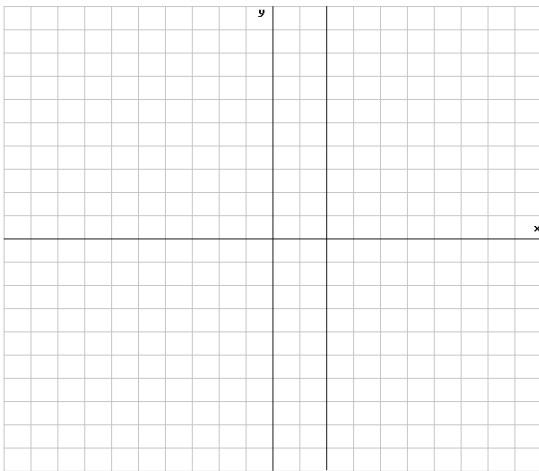
Función constante.

g)



Función constante.

h)



No es función.

7.-

a) $y = -2$

b) $x = 1$

c) $y = -7$

d) $x = -4$

e) $x = -1$

f) $y = 5$

g) $x = -3$

h) $y = 6$

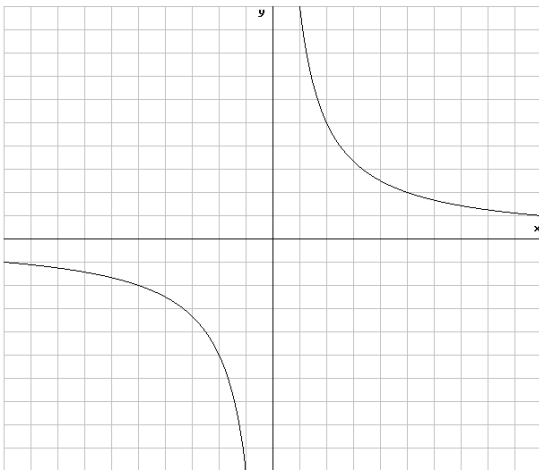
8.-

a) $y = -2x + 6$

b) $y = \frac{1}{5}x$

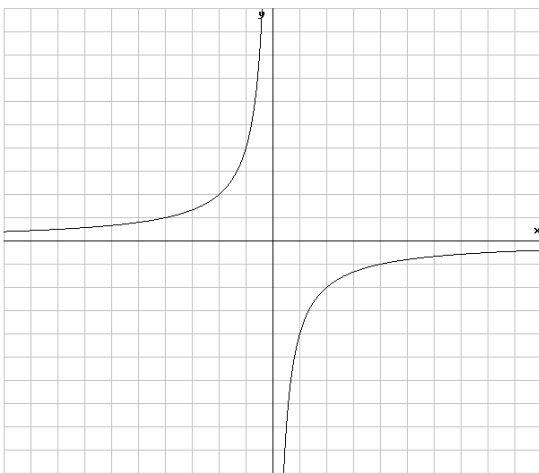
9.-

a)



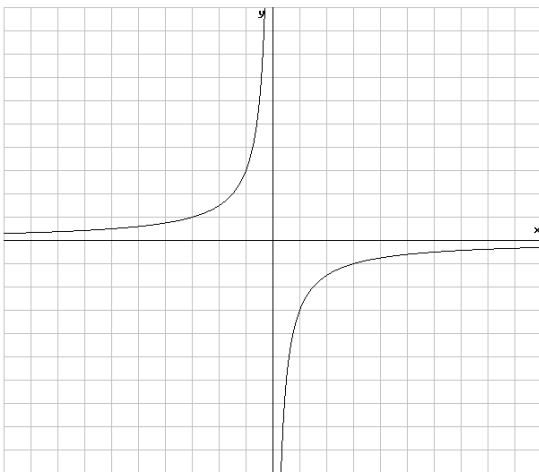
Hipérbola.

b)



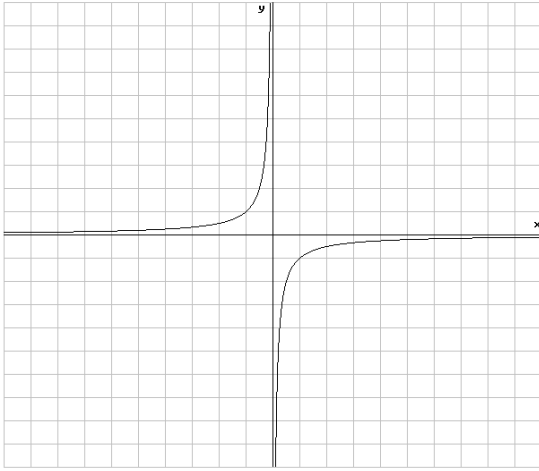
Hipérbola.

c)



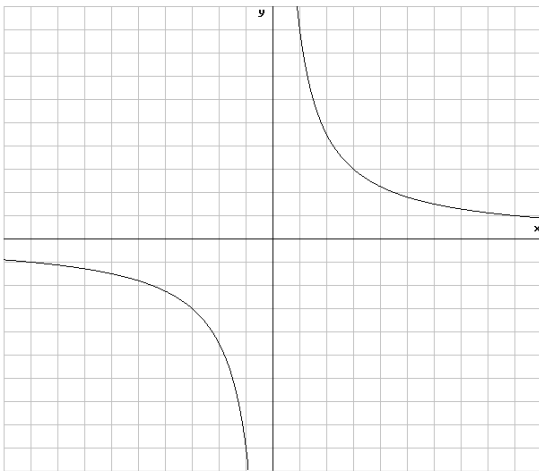
Hipérbola.

d)



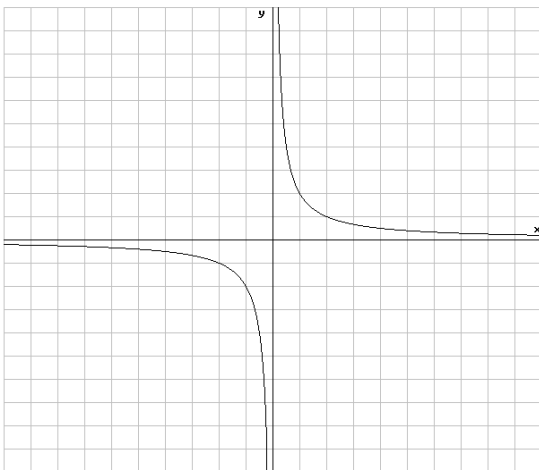
Hipérbola.

e)



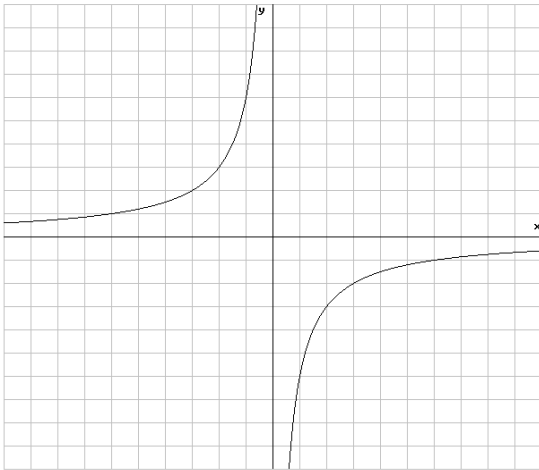
Hipérbola.

f)



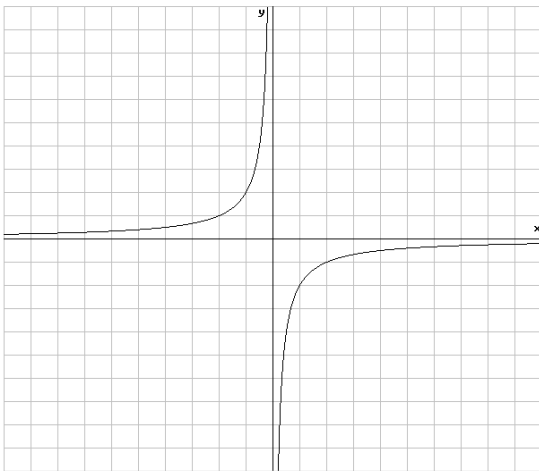
Hipérbola.

g)



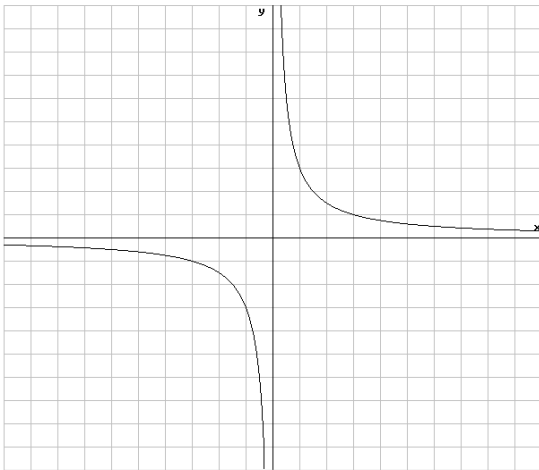
Hipérbola.

h)



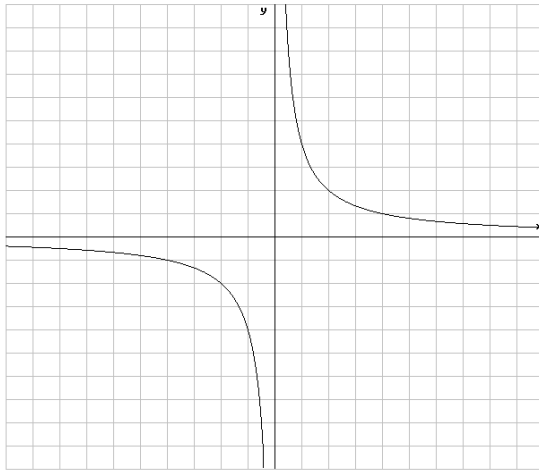
Hipérbola.

i)



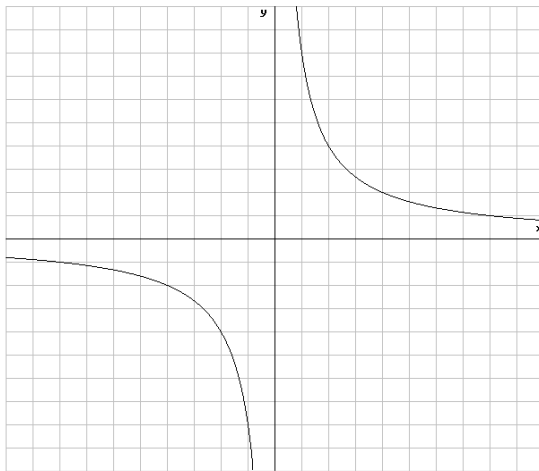
Hipérbola.

j)



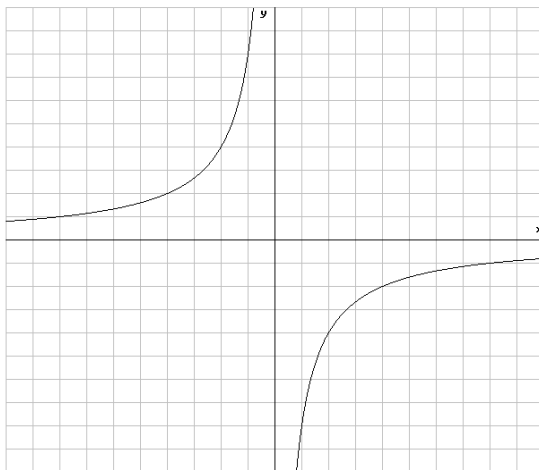
Hipérbola.

k)



Hipérbola.

l)



Hipérbola.

10.-

a) $y = \frac{6}{x}$

b) $y = \frac{1}{x}$

c) $y = -\frac{5}{x}$

d) $y = \frac{9}{x}$

g) $y = -\frac{16}{x}$

h) $y = \frac{8}{x}$

i) $y = \frac{4}{x}$

j) $y = -\frac{1}{x}$

$$e) y = -\frac{7}{x}$$

$$f) y = -\frac{12}{x}$$

$$k) y = \frac{5}{x}$$

$$l) y = -\frac{14}{x}$$