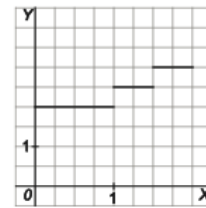


Ejercicios tema 6. Funciones.

2, 6, 8, 12, 15, 17, 19, 26, 27, 41, 42, 46, 48, 50, 55, 60, 64, 66, 70, 71, 81, 82, 86, 90

2.- a) \mathbb{R} b) $\mathbb{R} - \{-3, 1\}$ c) $[-2, \infty)$

$$6.- f(x) = \begin{cases} 2 & \text{si } 0 \leq x < 1 \\ 2 + \frac{n}{2} & \text{si } \frac{n+1}{2} \leq x < \frac{n+2}{2} \quad n \in \mathbb{N} \text{ y } n \geq 1 \end{cases}$$

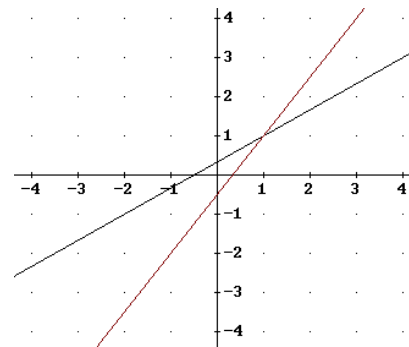


$$8.- f(x) = \begin{cases} -2x - 5 & \text{si } x < -5 \\ 5 & \text{si } x \geq -5 \end{cases}$$

12.- a) $(f \circ g)(x) = f[g(x)] = 2x^2 + (4h-3)x + (2h^2 - 3h - 5)$

$(g \circ f)(x) = 2x^2 - 3x + (h-5)$

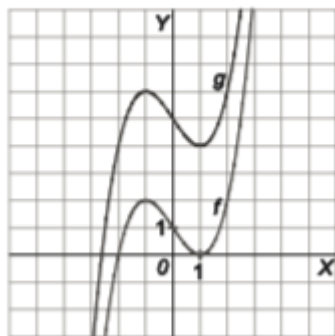
b) $h_1 = -1$ $h_2 = 5/2$



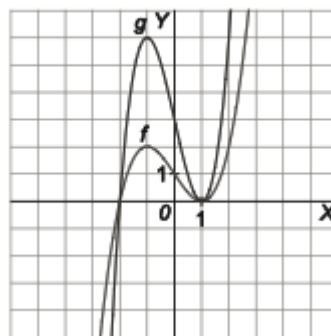
15.- $f^{-1}(x) = \frac{3x-1}{2}$

17.- $f^{-1}(x) = \frac{x^2+3}{2}$ con $x \geq 0$ $D(f^{-1}) = [0, \infty)$ $f^{-1}(3) = 6$

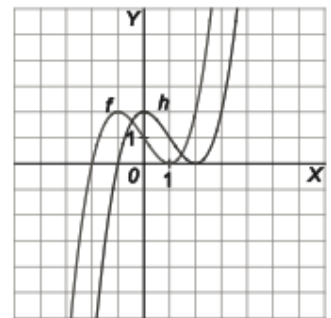
19.- a)



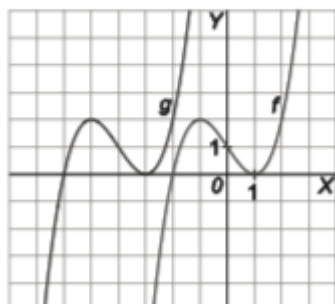
c)



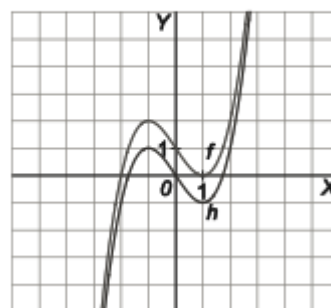
e)



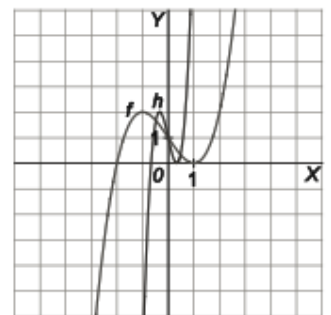
b)



d)



f)



Ejercicios tema 6. Funciones.

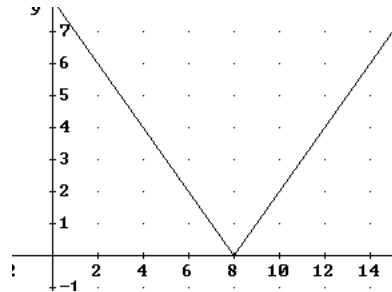
26.- a) 207400 b) 278400

27.- a) 46 € b) 22,5 €

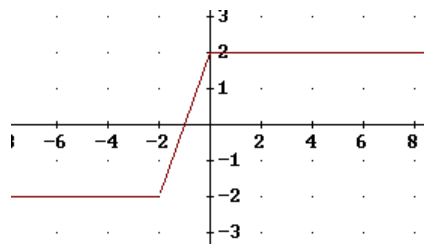
41.- a) \mathbb{R} b) $\mathbb{R} - \{1\}$ c) $\mathbb{R} - \{-1/2\}$ d) $\mathbb{R} - \{-3, 1\}$ e) $(-\infty, -3/2] \cup [1, \infty)$ f) $(-\infty, -3/2] \cup [1, \infty)$ g) $(-\infty, 3] \cup (5, \infty)$ h) $(-\infty, 5)$

42.- a) $D = \mathbb{R}$ $Re = [-1, 0) \cup (1, 2)$ b) $D = (-\infty, -1) \cup (2, \infty)$ $Re = \mathbb{R} - \{0\}$ c) $D = [-1, 1]$ $Re = [0, 1]$ d) $D = (-5, \infty)$ $Re = [-2, \infty)$

46.- a) $f(x) = \begin{cases} 8 - x & \text{si } x < 8 \\ x - 8 & \text{si } x \geq 8 \end{cases}$



b) $f(x) = \begin{cases} -2 & \text{si } x < -2 \\ 2x + 2 & \text{si } -2 \leq x < 0 \\ 2 & \text{si } x \geq 0 \end{cases}$



48.- a) $2x^2 - x - 3$ $D = \mathbb{R}$ b) $\frac{-x^4 + 5x^2 - 3}{x^2 - 4}$ $D = \mathbb{R} - [-2, 2]$ c) $(x^2 - x - 2)(x^2 - 4)$ $D = \mathbb{R} - [-2, 2]$ d) $\frac{1 - x^2}{x^2 - 4}$ $D = \mathbb{R} - [-2, 2]$

e) $\frac{x + 1}{x + 2}$ $D = \mathbb{R} - [-2, 2]$ f) $\frac{x - 2}{1 - x}$ $D = \mathbb{R} - [-1, 1]$ g) $\frac{\sqrt{2x - 4}}{x^2 - x - 2}$ $D = (2, \infty)$ h) $2x - 4$ $D = [2, \infty)$

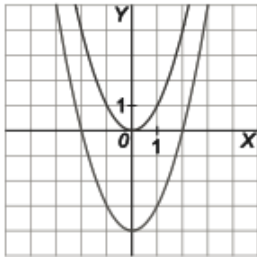
i) $-(x - 1)(x + 1)^2(x - 2)^2(x + 2)$ $D = \mathbb{R} - [-2, 2]$

50.- a) $\frac{9}{x} - 1$ $D = (0, \infty)$ b) $\frac{3}{x} - 1$ $D = (0, \infty)$ c) $\frac{3}{x - 1}$ $D = (0, 1) \cup (1, \infty)$ d) $\sqrt{\frac{3}{x^2 - 1}}$ $D = (-\infty, -1) \cup (1, \infty)$

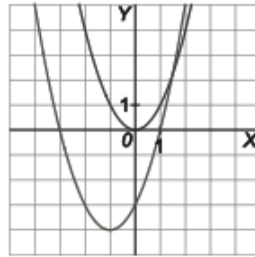
Ejercicios tema 6. Funciones.

55.-

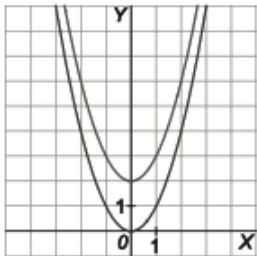
a) Traslación vertical de 4 unidades



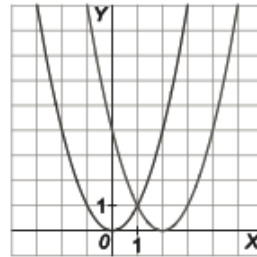
d) Traslación horizontal (1 u) y vertical (4 u)



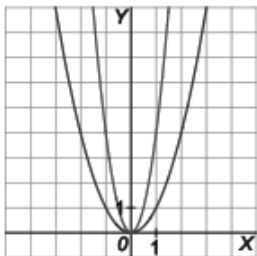
b) Traslación vertical de 2 unidades



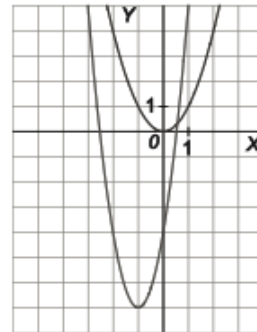
e) Traslación horizontal de dos unidades



c)



f) Dilatación vertical (1 u), Traslación horizontal (1 u), vertical (7 u) y dilatación



60.- 0,4602

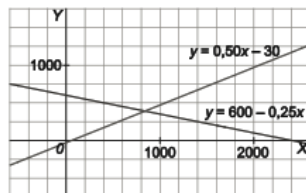
64.- a) $a=3$ $b=-6$ $c=7$ $f(x)=3x^2-6x+7$ b) $f(3)=16$ c) no, porque $f(0)$ debería estar por debajo de $f(1)=4$ y mediante la función hallado $f(0)=7$

66.- a) 130 € b) 190 €

70.- a) 34 b) 41,5 c) 30

71.- no es la misma

81.- a) oferta $q(500)=220$ $q(700)=320$ $q(900)=420$ demanda $r(500)=475$ $r(700)=425$ $r(900)=493,75$

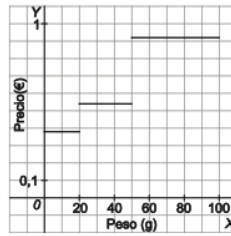


b) $p=840$ €

82.- a) 2,03 €

Ejercicios tema 6. Funciones.

b)

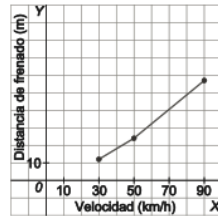


c) no es continua, sino escalonada definida a trozos.

86.- a) 42500 b) 2300 c) 2023

90.- a)

Interpolación cuadrática



b) 48 m

c) 132 m