Review Chapter 1

- Match the equation with the graph with the table

(A) $y = 2x + 3$

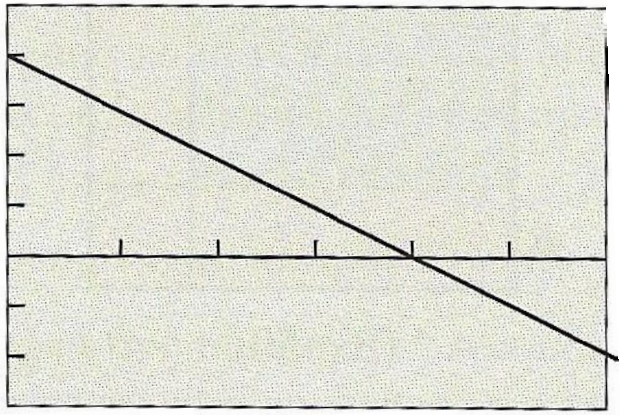
(B) $y = x^2 + 5$

(C) $y = 12 - 3x$

(D) $y = 4x + 3$

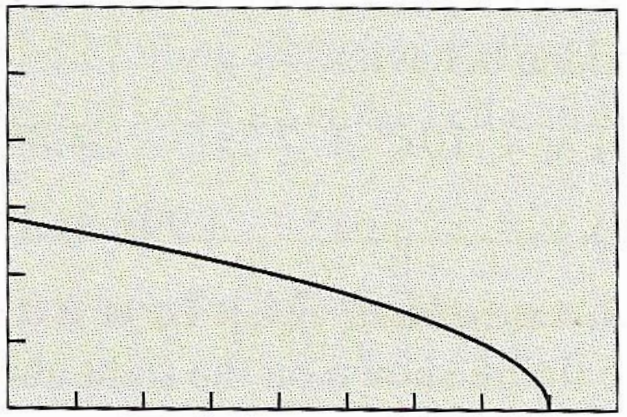
(E) $y = \sqrt{8 - x}$

x	1	2	3	4	5	6
y	6	9	14	21	30	41



[0, 6] by [–9, 15]

x	0	2	4	6	8	10
y	3	7	11	15	19	23



[0, 9] by [0, 6]

Find the domain of the function algebraically

$$f(x) = \frac{\sqrt{9-x}}{(x+3)(x^2+4)}$$

Find the domain of the function algebraically

$$f(x) = \frac{5x - 1}{(x + 2)(x - 4)}$$

Find the domain and range of the following function

$$f(x) = (x-4)^2 + 2$$

Graph the piecewise function

$$f(x) = \begin{cases} 3x + 2 & x < 0 \\ 1 - x^2 & x \geq 0 \end{cases}$$

Determine any points of discontinuity. Label them as removeable or non-removeable. Also, determine any horizontal asymptotes.

$$f(x) = \frac{x}{x^2 - 2x}$$

Find the range of the function algebraically

$$f(x) = 10 - x^2$$

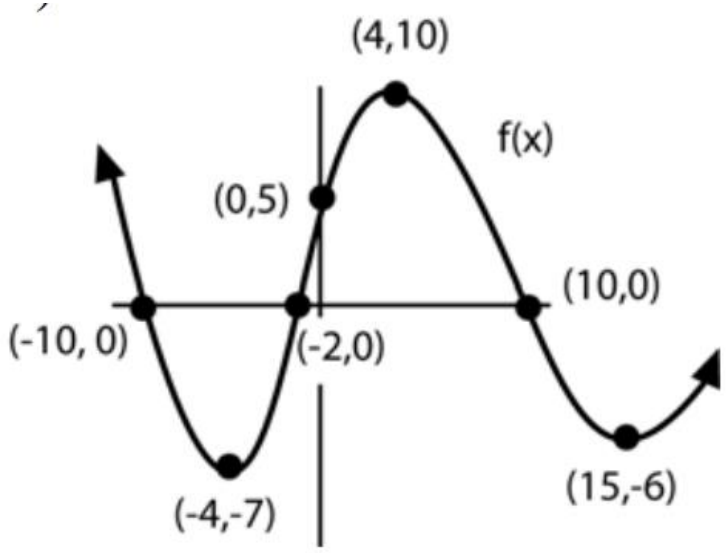
Find the range of the function algebraically

$$f(x) = 5 + \sqrt{4 - x}$$

Graph the function and tell whether or not it has a point of discontinuity at x = 0. If there is a discontinuity, tell whether it is removeable or non-removeable.

$$f(x) = \frac{x^3 + x}{x}$$

State whether each labeled point identifies a local maximum, a local minimum, or neither. Identify intervals on which the function is decreasing and increasing.



Determine whether the function is even, odd, or neither.

A) $f(x) = \dfrac{1}{3x^2 + 2}$

B) $f(x) = \dfrac{1}{3x}$

Determine all horizontal and vertical asymptotes

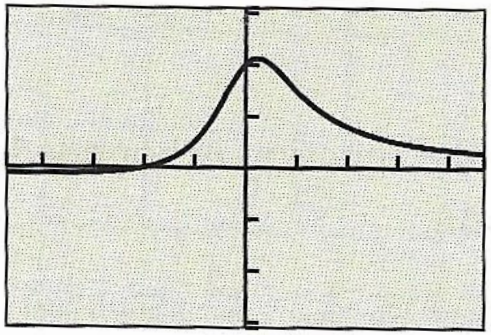
$$f(x) = \frac{4x^2 + 2}{8 - 2x^2}$$

63. $y = \dfrac{x + 2}{2x + 1}$

64. $y = \dfrac{x^2 + 2}{2x + 1}$

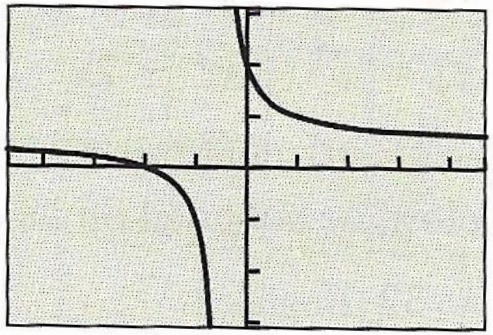
65. $y = \dfrac{x + 2}{2x^2 + 1}$

66. $y = \dfrac{x^3 + 2}{2x^2 + 1}$



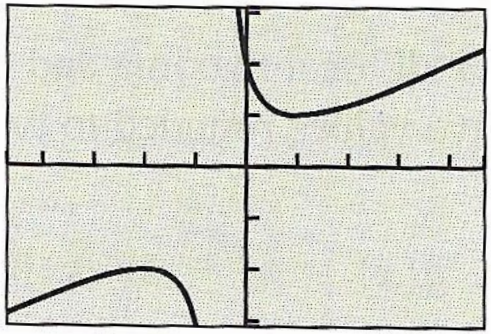
[–4.7, 4.7] by [–3.1, 3.1]

(a)



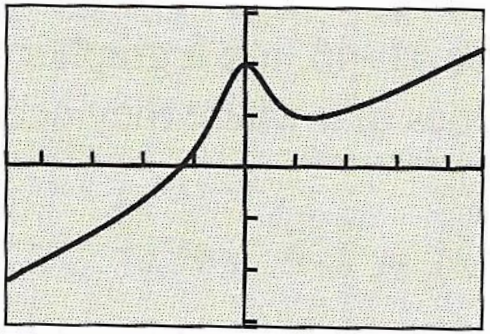
[–4.7, 4.7] by [–3.1, 3.1]

(b)



[–4.7, 4.7] by [–3.1, 3.1]

(c)



[–4.7, 4.7] by [–3.1, 3.1]

(d)

Identify which of the twelve basic functions are even or odd.

$y = x$ $y = \ln x$ $y = x^2$ $y = \sin x$ $y = x^3$ $y = \cos x$

$y = \frac{1}{x}$ $y = |x|$ $y = \sqrt{x}$ $y = \text{int}(x)$ $y = e^x$ $y = \frac{1}{1+e^{-x}}$