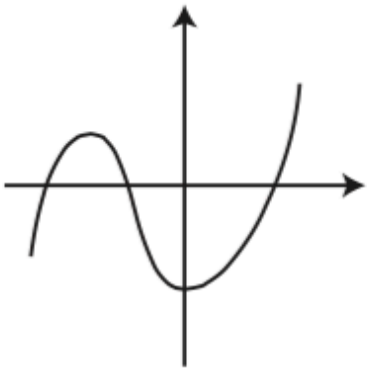
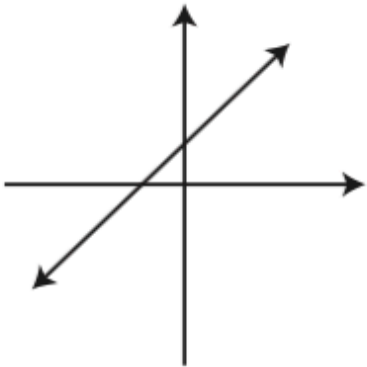


6. Which of the following is NOT the graph of a function?

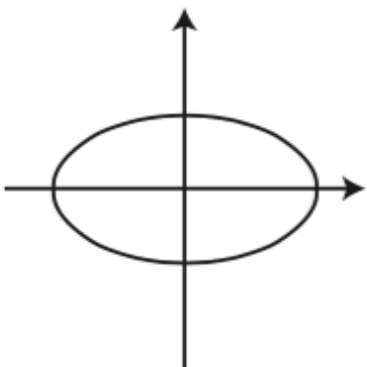
f.



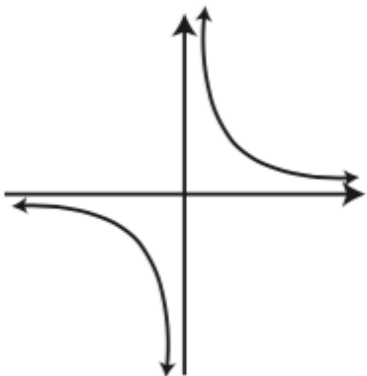
g.



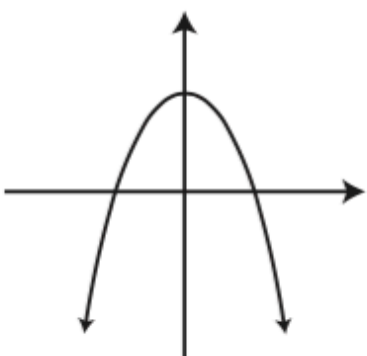
h.



i.



j.



- 19.** For the function $h(x) = 4x^2 - 5x$, what is the value of $h(-3)$?
- A.** -93
 - B.** -9
 - C.** 21
 - D.** 51
 - E.** 159

5. If $f(x) = (3x + 7)^2$, then $f(1) = ?$

A. 10

B. 16

C. 58

D. 79

E. 100

14. A function $f(x)$ is defined as $f(x) = -8x^2$. What is $f(-3)$?

F. -72

G. 72

H. 192

J. -576

K. 576

53. A function P is defined as follows:

$$\text{for } x > 0, P(x) = x^5 + x^4 - 36x - 36$$

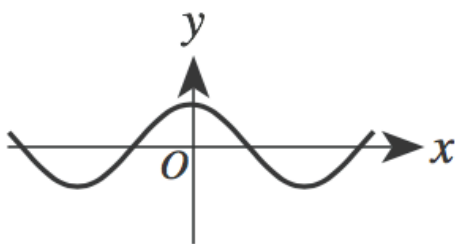
$$\text{for } x < 0, P(x) = -x^5 + x^4 + 36x - 36$$

What is the value of $P(-1)$?

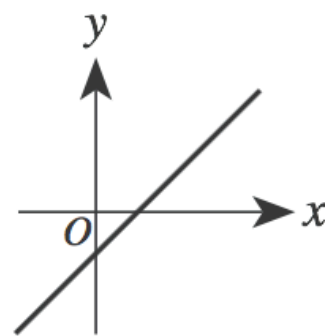
- A. -70
- B. -36
- C. 0
- D. 36
- E. 70

59. A function f is an *odd* function if and only if $f(-x) = -f(x)$ for every value of x in the domain of f . One of the functions graphed in the standard (x,y) coordinate plane below is an odd function. Which one?

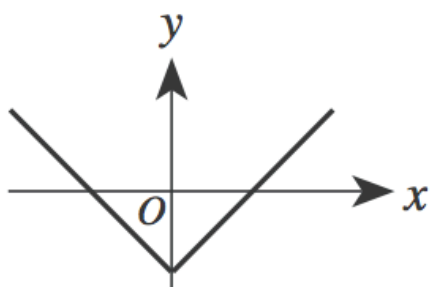
A.



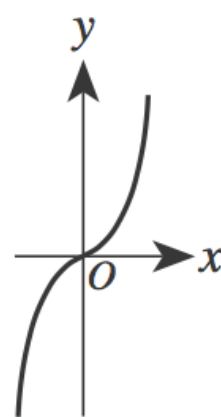
D.



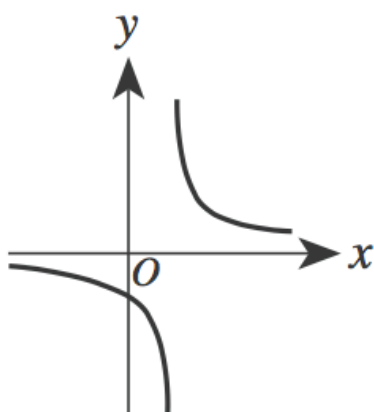
B.



E.



C.



57. Consider the functions $f(x) = \sqrt{x}$ and $g(x) = 7x + b$. In the standard (x,y) coordinate plane, $y = f(g(x))$ passes through $(4,6)$. What is the value of b ?

A. 8

B. -8

C. -25

D. -26

E. $4 - 7\sqrt{6}$

32. Given $f(x) = 4x + 1$ and $g(x) = x^2 - 2$, which of the following is an expression for $f(g(x))$?

F. $-x^2 + 4x + 1$

G. $x^2 + 4x - 1$

H. $4x^2 - 7$

J. $4x^2 - 1$

K. $16x^2 + 8x - 1$

16. If $f(x) = 3x + 2$ and $g(x) = -2x - 1$, find $f(g(x))$.

f. $x + 1$

g. $-6x - 1$

h. $5x + 3$

i. $2x^2 - 4$

j. $-6x^2 - 7x - 2$

50. If the function f satisfies the equation $f(x+y) = f(x) + f(y)$ for every pair of real numbers x and y , what is(are) the possible value(s) of $f(0)$?

- F. Any real number
- G. Any positive real number
- H. 0 and 1 only
- J. 1 only
- K. 0 only

FUNCTIONS

$$f(x+y) \neq f(x) + f(y)$$

only if they are both 0

DO YOUR FIGURING HERE.

23. Given $f(x) = 2x^2 - 5x + 7$, what is the value of $f(-10)$?

- A. -243
- B. -143
- C. 157
- D. 257
- E. 457

$$f(-10) = 2(-10)^2 - 5(-10) + 7$$
$$= 200 - (-50) + 7$$
$$= 250 + 7 = 257$$



42. Given $f(x) = x - \frac{1}{x}$ and $g(x) = \frac{1}{x}$, what is $f\left(g\left(\frac{1}{2}\right)\right)$?

F. -3

G. $-\frac{3}{2}$

H. $-\frac{2}{3}$

J. 0

K. $\frac{3}{2}$