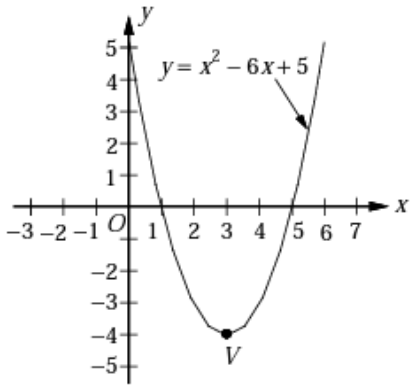
SAT/PSAT Function Practice
Oct 2023
NO CALCULATOR

NAME: _____



The graph of quadratic function $y = x^2 - 6x + 5$ is shown above.

1

Which of the following is an equivalent form of the equation of the graph shown above, from which the coordinates of vertex V can be identified as constants in the equation?

A) $y = (x-1)(x-5)$

B) $y = (x+1)(x+5)$

C) $y = x(x-6)+5$

D) $y = (x-3)^2 - 4$

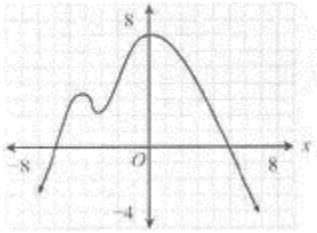
2. If $f(x) = -6x + 1$, what is $f\left(\frac{1}{2}x - 1\right)$ equal to?

A) $-3x + 7$
B) $-3x - 5$
C) $-3x + 1$
D) $-3x - 1$

3. Let the function of f be defined such that $f(x) = x^2 - c$, where c is a constant. If $f(-2) = 6$, what's the value of c?

A) -10
B) -2
C) 0
D) 2

4. The figure shows the graph of $p(x) - 4$.



What's the value of $p(0)$?

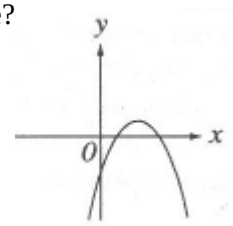
A) 3
B) 4
C) 7
D) 11

5. If $x + y = 10$ and $x - y = 4$, what is the value of $x^2 - y^2$?

A) 20
B) 24
C) 36
D) 40

6. The graph of $y = g(x)$ is shown in the figure. If $g(x) = ax^2 + bx + c$, for constants $a, b,$ & c, and if $abc \neq 0$, then which of the following must be true?

A) $ac > 1$
B) $c > 1$
C) $ac > 0$
D) $a > 0$



7.

If $(ax+b)(2x-5)=12x^2+kx-10$ for all values of x, what is the value of k?

A) -26

B) -10

C) 24

D) 32

8. If $f(x)=\frac{x^2-6x+3}{x-1}$, what is $f(-1)$?

A) -5

B) -2

C) 2

D) 5

9. If $x^2-ax-12$ has a factor of $(x+3)$, what is the value of a?

10.

$$g(x)=x^2+55$$

What is the minimum value of the given function?

A) 3,025

B) 110

C) 55

D) 0

11. If the function $f(x)=(x+1)^2-4$ is graphed on the xy-coordinate plane, what are the coordinates of the y-intercept of the function?

A) $(0,16)$

B) $(0,1)$

C) $(0,-3)$

D) (0, -4)

12.

$$f(x)=4x^2-50x+126$$

The given equation defines the function f. For what value of x does $f(x)$ reach its minimum?