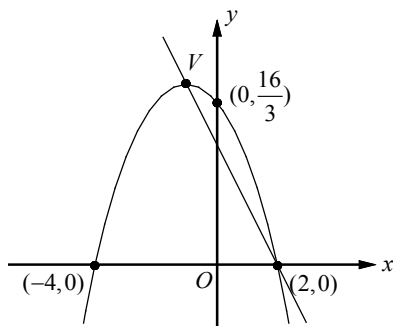


Exercises - Solving Systems Consisting Linear and Quadratic Equations

1



The xy -plane above shows two x -intercepts, a y -intercept and vertex V of a parabola. If the line passes through the points $(2, 0)$ and V , which of the following must be the y -intercept of the line?

- A) 3
- B) $\frac{7}{2}$
- C) 4
- D) $\frac{9}{2}$

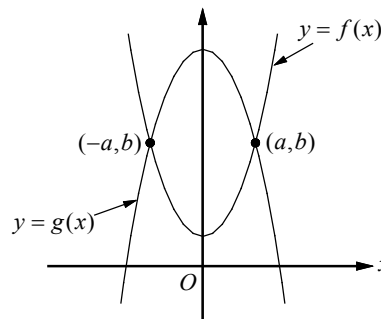
2

$$\begin{cases} y = x^2 + x \\ y = ax - 1 \end{cases}$$

In the system of equations above, $a > 0$. If the system of equations has exactly one real solution, what is the value of a ?

- A) $\frac{5}{2}$
- B) 3
- C) $\frac{7}{2}$
- D) 4

3



The function f and g , defined by $f(x) = 2x^2 + 2$ and $g(x) = -2x^2 + 18$, are graphed in the xy -plane above. The two graphs intersect at the points (a, b) and $(-a, b)$. What is the value of b ?

- A) 6
- B) 8
- C) 10
- D) 12

4

$$\begin{cases} x^2 + y^2 = 14 \\ x^2 - y = 2 \end{cases}$$

If (x, y) is a solution to the system of equations above, what is the value of x^2 ?

- A) 2
- B) 3
- C) 4
- D) 5