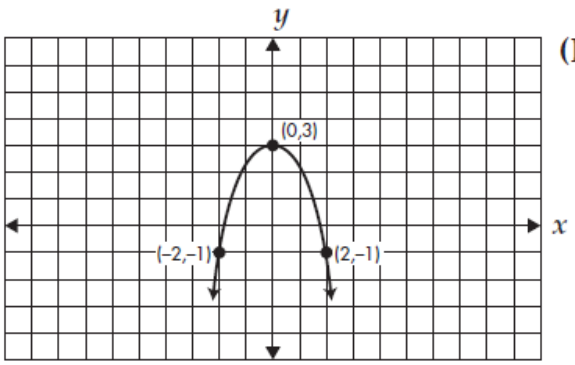
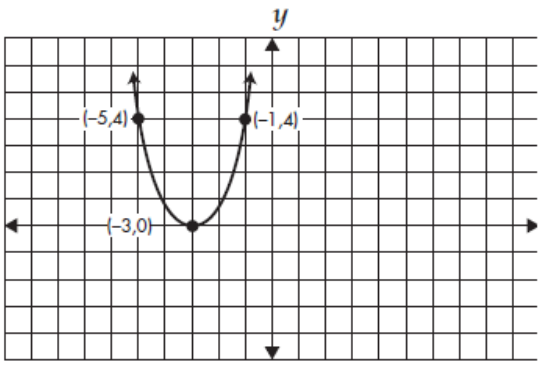
36 Which of the following is the graph of $y = x^2 + 6x + 9$?

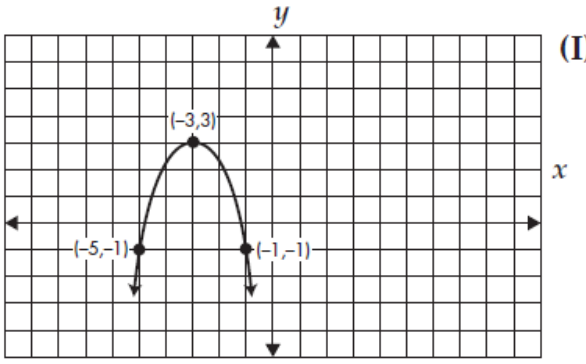
(F)



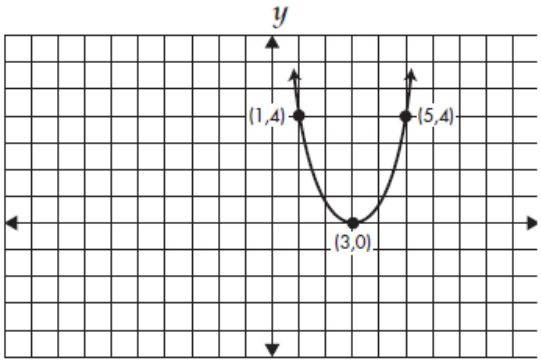
(H)



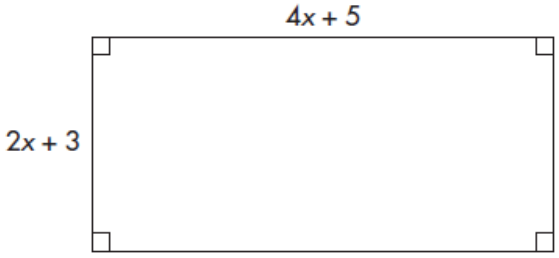
(G)



(I)



37 Look at the following rectangle.



Which of the following represents the area?

(A) $12x + 16$

(B) $6x + 8$

(C) $8x^2 + 15$

(D) $8x^2 + 22x + 15$

Answers

36 **(H)**

Let $y = 0$. Then $0 = x^2 + 6x + 9$ and the right side can be factored as $(x + 3)^2$. The only solution to $0 = (x + 3)^2$ is $x = -3$. Thus, the point $(-3, 0)$ must lie on the graph. Only answer choice (H) satisfies this requirement. Notice that the other two named points on this graph also satisfy the equation. For $x = -5$, $y = (-5)^2 + (6)(-5) + 9 = 4$; for $x = -1$, $y = (-1)^2 + 6(-1) + 9 = 4$.

37 **(D)**

The area of a rectangle is its length times its width. For this diagram, the area is $(4x + 5)(2x + 3) = 8x^2 + 12x + 10x + 15 = 8x^2 + 22x + 15$.