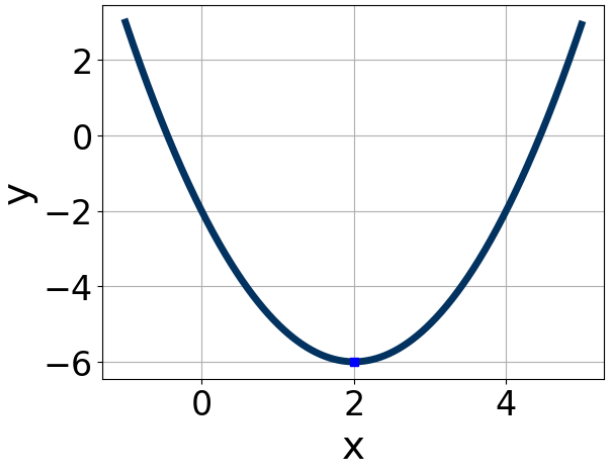
1. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-0.1, 2.1]$, $b \in [-4, 0]$, and $c \in [-4, 1]$

B. $a \in [-1.1, -0.9]$, $b \in [-4, 0]$, and $c \in [-12, -5]$

C. $a \in [-1.1, -0.9]$, $b \in [4, 6]$, and $c \in [-12, -5]$

D. $a \in [-0.1, 2.1]$, $b \in [4, 6]$, and $c \in [-4, 1]$

E. $a \in [-0.1, 2.1]$, $b \in [4, 6]$, and $c \in [7, 14]$

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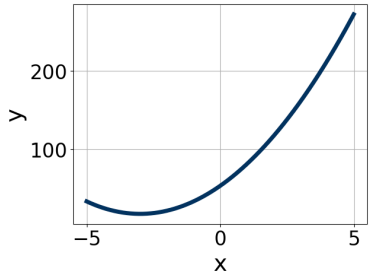
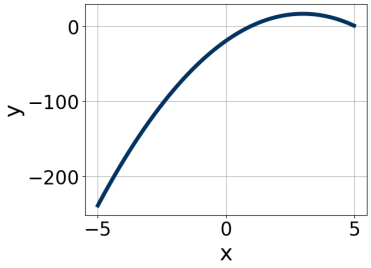
2. Graph the equation below.

$$f(x) = (x + 3)^2 + 17$$

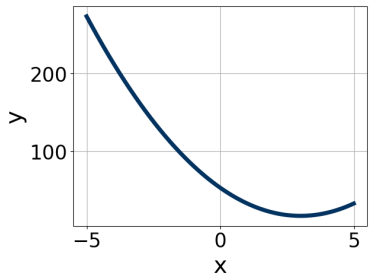
A.



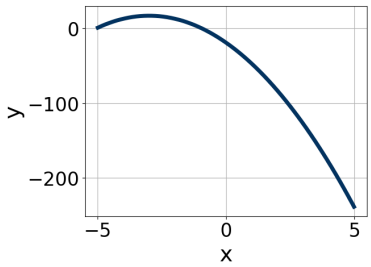
B.



C.



D.



E. None of the above.

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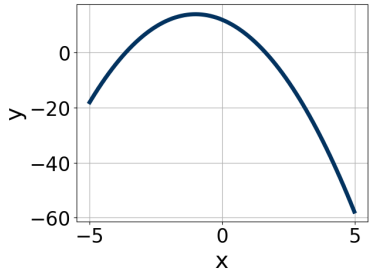
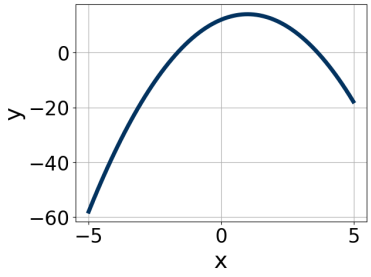
3. Graph the equation below.

$$f(x) = (x-1)^2 + 14$$

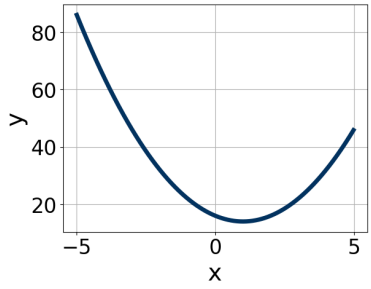
A.



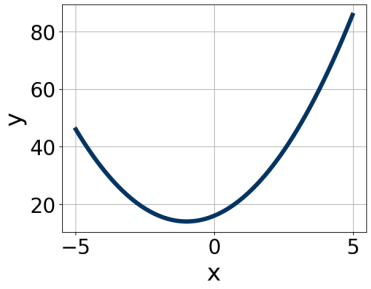
C.



B.



D.



E. None of the above.

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4. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax+b)(cx+d); b \leq d$.

$$36x^2 + 25x - 25$$

A. $a \in [-1.1, 2.4]$, $b \in [-21, -15]$, $c \in [0.67, 1.54]$, and $d \in [39, 49]$

B. $a \in [1.4, 4.4]$, $b \in [-6, -2]$, $c \in [9.95, 12.66]$, and $d \in [5, 12]$

C. $a \in [17.4, 19.4]$, $b \in [-6, -2]$, $c \in [1.65, 3.23]$, and $d \in [5, 12]$

D. $a \in [7.7, 10.2]$, $b \in [-6, -2]$, $c \in [3.99, 4.62]$, and $d \in [5, 12]$

E. None of the above.

---

5. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$36x^2 - 60x + 25$$

A. $a \in [2.4, 6.1]$, $b \in [-6, 0]$, $c \in [5.7, 7.6]$, and $d \in [-7, -1]$

B. $a \in [11.3, 12.4]$, $b \in [-6, 0]$, $c \in [1.6, 4.6]$, and $d \in [-7, -1]$

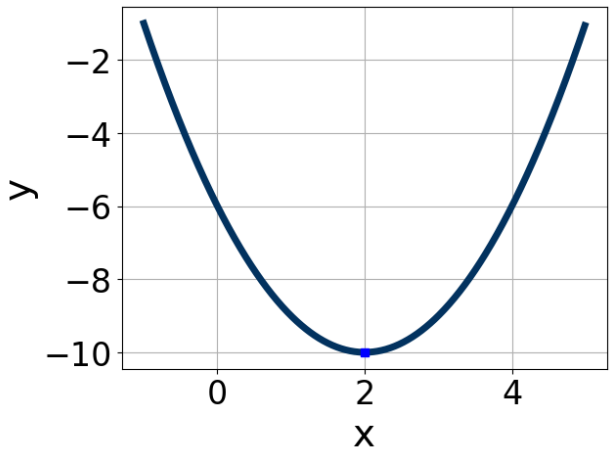
C. $a \in [1.3, 2.4]$, $b \in [-6, 0]$, $c \in [14.2, 19.6]$, and $d \in [-7, -1]$

D. $a \in [-1, 1.3]$, $b \in [-39, -26]$, $c \in [0.4, 2.2]$, and $d \in [-31, -29]$

E. None of the above.

---

6. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [0, 2.1]$, $b \in [4, 5]$, and $c \in [12, 16]$

B. $a \in [0, 2.1]$, $b \in [-5, -3]$, and $c \in [-10, -5]$

C. $a \in [-2.4, -0.4], \quad b \in [4, 5], \text{ and } \quad c \in [-18, -12]$

D. $a \in [0, 2.1], \quad b \in [4, 5], \text{ and } \quad c \in [-10, -5]$

E. $a \in [-2.4, -0.4], \quad b \in [-5, -3], \text{ and } \quad c \in [-18, -12]$

---

7. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-20x^2 - 12x + 7 = 0$$

A. $x_1 \in [-28.21, -26.58]$ and $x_2 \in [25.01, 26.46]$

B. $x_1 \in [-2.16, -0.63]$ and $x_2 \in [-0.8, 0.6]$

C. $x_1 \in [-7.95, -7.16]$ and $x_2 \in [18.61, 19.61]$

D. $x_1 \in [-0.83, -0.32]$ and $x_2 \in [0.83, 1.8]$

E. There are no Real solutions.

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8. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$20x^2 - 69x + 54 = 0$$

A. $x_1 \in [1.18, 1.23]$ and $x_2 \in [1.78, 2.38]$

B. $x_1 \in [0.72, 0.8]$ and $x_2 \in [2.26, 4.68]$

C. $x_1 \in [0.43, 0.57]$ and $x_2 \in [5.49, 6.16]$

D. $x_1 \in [0.34, 0.43]$ and $x_2 \in [6.06, 8.15]$

E. $x_1 \in [23.98, 24.13]$ and $x_2 \in [44.97, 46.05]$

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9. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$15x^2 + 47x + 36 = 0$$

A. $x_1 \in [-10.8, -6.8]$ and $x_2 \in [-0.33, 0.07]$

B. $x_1 \in [-29.4, -24.2]$ and $x_2 \in [-20.1, -19.75]$

C. $x_1 \in [-6.4, -4.8]$ and $x_2 \in [-0.71, -0.42]$

D. $x_1 \in [-3.7, -1.9]$ and $x_2 \in [-0.92, -0.68]$

E. $x_1 \in [-1.9, 0.5]$ and $x_2 \in [-1.41, -1.1]$

---

10. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-16x^2 - 9x + 3 = 0$$

A. $x_1 \in [-0.6, 0.5]$ and $x_2 \in [0.3, 3.9]$

B. $x_1 \in [-17.6, -16.6]$ and $x_2 \in [14.4, 17.6]$

C. $x_1 \in [-5.8, -1.5]$ and $x_2 \in [11.3, 14.1]$

D. $x_1 \in [-2.1, -0.5]$ and $x_2 \in [-0.9, 0.3]$

E. There are no Real solutions.
