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

$$20x^2 - 21x - 54 = 0$$

A. $x_1 \in [-5.25, -1.96]$ and $x_2 \in [0.59, 1.06]$

B. $x_1 \in [-7.87, -5.36]$ and $x_2 \in [0.1, 0.54]$

C. $x_1 \in [-24.05, -23.74]$ and $x_2 \in [44.65, 45.07]$

D. $x_1 \in [-0.65, -0.32]$ and $x_2 \in [6.63, 6.8]$

E. $x_1 \in [-1.38, -0.7]$ and $x_2 \in [1.94, 2.3]$

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

$$17x^2 - 8x - 8 = 0$$

A. $x_1 \in [-24.49, -23.63]$ and $x_2 \in [23.5, 25.3]$

B. $x_1 \in [-0.85, 0.67]$ and $x_2 \in [0.5, 1.9]$

C. $x_1 \in [-1.24, -0.76]$ and $x_2 \in [-1.6, 0.9]$

D. $x_1 \in [-8.7, -7.84]$ and $x_2 \in [15.3, 16.8]$

E. There are no Real solutions.

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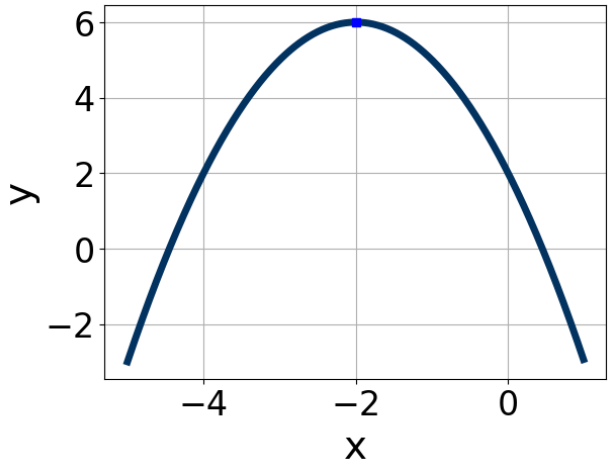
3. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [0.7, 1.1]$, $b \in [-5, -2]$, and $c \in [7, 11]$

B. $a \in [-1.5, -0.3]$, $b \in [2, 8]$, and $c \in [-11, -9]$

C. $a \in [-1.5, -0.3]$, $b \in [-5, -2]$, and $c \in [2, 7]$

D. $a \in [-1.5, -0.3]$, $b \in [2, 8]$, and $c \in [2, 7]$

E. $a \in [0.7, 1.1]$, $b \in [2, 8]$, and $c \in [7, 11]$

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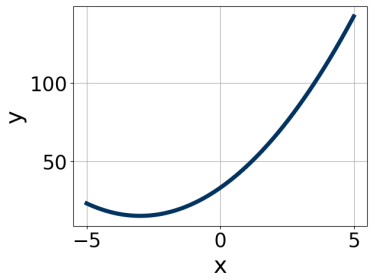
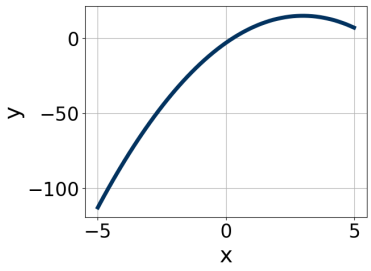
4. Graph the equation below.

$$f(x) = (x + 3)^2 + 15$$

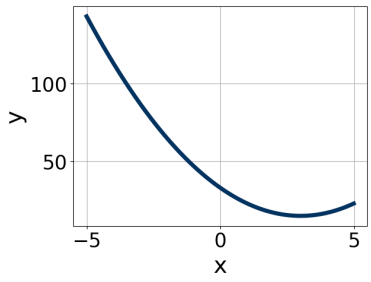
A.



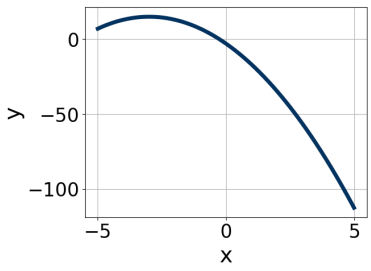
C.



B.

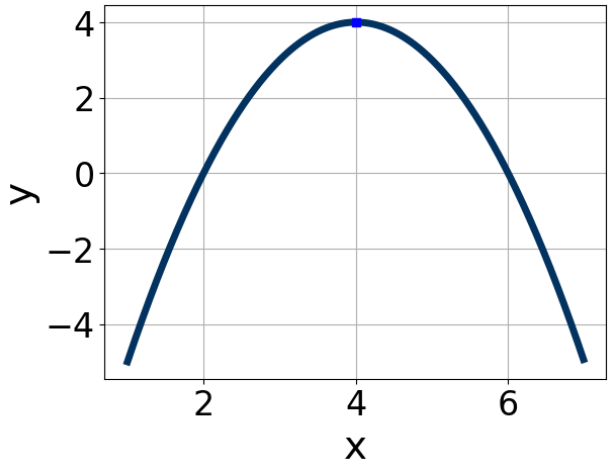


D.



E. None of the above.

5. 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. $a \in [-3, 0]$, $b \in [7, 14]$, and $c \in [-15, -9]$

B. $a \in [1, 2]$, $b \in [-11, -6]$, and $c \in [15, 21]$

C. $a \in [-3, 0]$, $b \in [-11, -6]$, and $c \in [-15, -9]$

D. $a \in [1, 2]$, $b \in [7, 14]$, and $c \in [15, 21]$

E. $a \in [-3, 0]$, $b \in [-11, -6]$, and $c \in [-20, -16]$

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

$$-20x^2 + 11x + 2 = 0$$

A. $x_1 \in [-13.92, -13.81]$ and $x_2 \in [2.68, 3.49]$

B. $x_1 \in [-0.43, -0.03]$ and $x_2 \in [0.42, 1.98]$

C. $x_1 \in [-16.54, -16.14]$ and $x_2 \in [16.71, 17.18]$

D. $x_1 \in [-1.26, -0.53]$ and $x_2 \in [-0.49, 0.67]$

E. There are no Real solutions.

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

$$54x^2 + 57x + 10$$

A. $a \in [1.8, 5.1]$, $b \in [1, 6]$, $c \in [16, 18.9]$, and $d \in [4, 9]$

B. $a \in [14.9, 19.3]$, $b \in [1, 6]$, $c \in [2.5, 3.9]$, and $d \in [4, 9]$

C. $a \in [7.1, 10.4]$, $b \in [1, 6]$, $c \in [4.5, 7.3]$, and $d \in [4, 9]$

D. $a \in [0, 1.9]$, $b \in [10, 18]$, $c \in [0.7, 1.3]$, and $d \in [43, 49]$

E. None of the above.

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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 $x_1 \leq x_2$.

$$25x^2 + 75x + 54 = 0$$

A. $x_1 \in [-45.78, -43.82]$ and $x_2 \in [-30.18, -29.87]$

B. $x_1 \in [-6.14, -4.41]$ and $x_2 \in [-0.47, -0.27]$

C. $x_1 \in [-3.99, -2.9]$ and $x_2 \in [-0.64, -0.5]$

D. $x_1 \in [-1.96, -1.31]$ and $x_2 \in [-1.23, -1.1]$

E. $x_1 \in [-9.46, -8.78]$ and $x_2 \in [-0.31, -0.24]$

---

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

$$24x^2 + 2x - 15$$

A. $a \in [-0.3, 2.4]$, $b \in [-22, -17]$, $c \in [-0.9, 1.6]$, and $d \in [18, 25]$

B. $a \in [-0.3, 2.4]$, $b \in [-6, 3]$, $c \in [16.5, 20.7]$, and $d \in [5, 8]$

C. $a \in [1.7, 5.6]$, $b \in [-6, 3]$, $c \in [4.2, 9.6]$, and $d \in [5, 8]$

D. $a \in [7.7, 10.6]$, $b \in [-6, 3]$, $c \in [1.1, 3.5]$, and $d \in [5, 8]$

E. None of the above.

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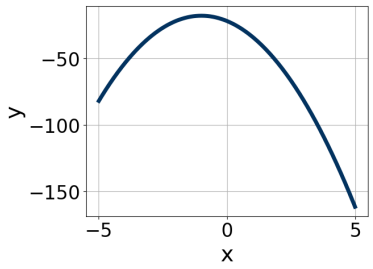
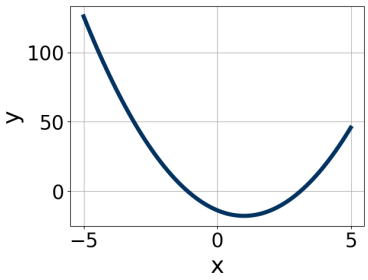
10. Graph the equation below.

$$f(x) = -(x-1)^2 - 18$$

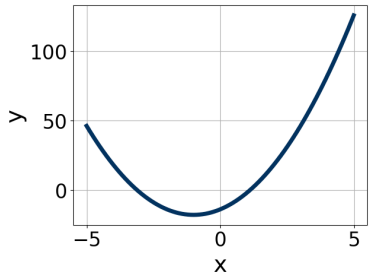
A.



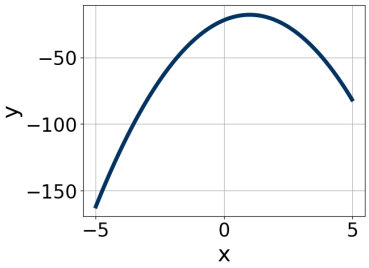
C.



B.



D.



E. None of the above.
