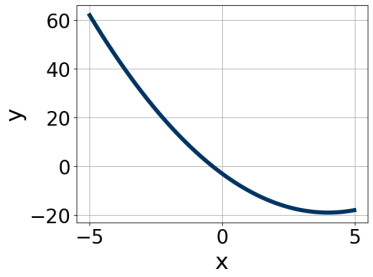
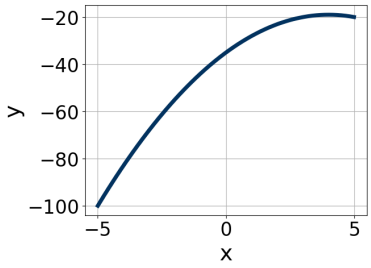
1. Graph the equation below.

$$f(x) = -(x+4)^2 - 19$$

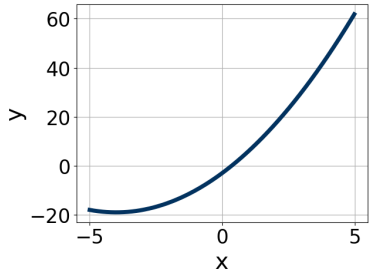
A.



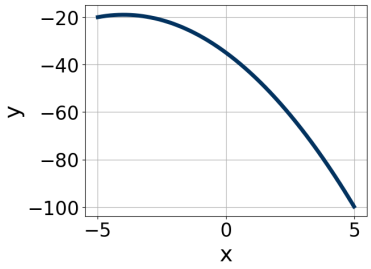
C.



B.



D.



E. None of the above.

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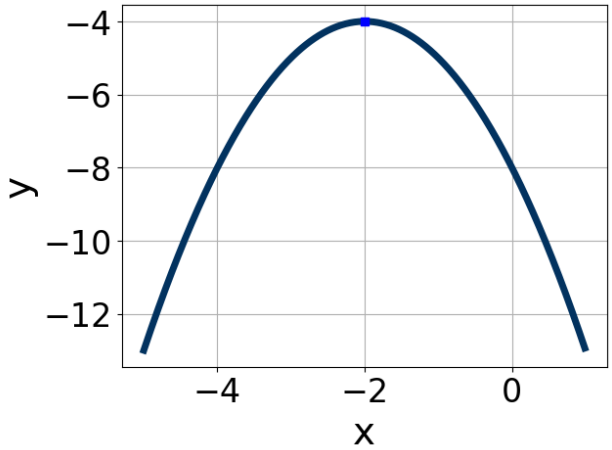
2. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-1.7, -0.8]$, $b \in [3, 6]$, and $c \in [0, 5]$

B. $a \in [0.9, 1.5]$, $b \in [-6, -3]$, and $c \in [0, 5]$

C. $a \in [-1.7, -0.8]$, $b \in [-6, -3]$, and $c \in [-8, -3]$

D. $a \in [0.9, 1.5]$, $b \in [3, 6]$, and $c \in [0, 5]$

E. $a \in [-1.7, -0.8]$, $b \in [3, 6]$, and $c \in [-8, -3]$

---

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

$$15x^2 - 9x - 5 = 0$$

A. $x_1 \in [-0.72, -0.3]$ and $x_2 \in [0.7, 1.8]$

B. $x_1 \in [-1.29, -0.91]$ and $x_2 \in [0.3, 0.4]$

C. $x_1 \in [-19.36, -18.47]$ and $x_2 \in [19.2, 21.7]$

D. $x_1 \in [-5.71, -5.07]$ and $x_2 \in [13.4, 14.5]$

E. There are no Real solutions.

---

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

$$-15x^2 - 15x + 2 = 0$$

A. $x_1 \in [-0.28, 0.82]$ and $x_2 \in [0.27, 1.5]$

B. $x_1 \in [-2.09, -1.73]$ and $x_2 \in [16.04, 16.8]$

C. $x_1 \in [-19.34, -18.54]$ and $x_2 \in [17.52, 19.11]$

D. $x_1 \in [-1.53, -0.47]$ and $x_2 \in [-0.45, 1.06]$

E. There are no Real solutions.

---

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

$$24x^2 + 50x + 25$$

A. $a \in [5.77, 6.9]$, $b \in [2, 14]$, $c \in [3.6, 4.15]$, and $d \in [1, 7]$

B. $a \in [11.52, 13.7]$, $b \in [2, 14]$, $c \in [1.41, 2.41]$, and $d \in [1, 7]$

C. $a \in [-0.7, 1.21]$, $b \in [18, 26]$, $c \in [0.67, 1.76]$, and $d \in [30, 34]$

D. $a \in [1.39, 2.59]$, $b \in [2, 14]$, $c \in [10.77, 12.36]$, and $d \in [1, 7]$

E. None of the above.

---

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

$$15x^2 + 38x + 24 = 0$$

A. $x_1 \in [-2.61, -2.3]$ and $x_2 \in [-0.78, -0.62]$

B. $x_1 \in [-20.02, -19.93]$ and $x_2 \in [-18.12, -17.96]$

C. $x_1 \in [-6.26, -5.92]$ and $x_2 \in [-0.29, -0.25]$

D. $x_1 \in [-1.57, -1.24]$ and $x_2 \in [-1.22, -1.16]$

E. $x_1 \in [-2.79, -2.45]$ and $x_2 \in [-0.65, -0.55]$

---

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

$$36x^2 - 65x + 25$$

A. $a \in [0.65, 1.07]$, $b \in [-50, -43]$, $c \in [0.04, 1.62]$, and $d \in [-24, -18]$

B. $a \in [1.49, 3.1]$, $b \in [-8, -4]$, $c \in [11.15, 12.41]$, and $d \in [-7, 4]$

C. $a \in [8.23, 9.74]$, $b \in [-8, -4]$, $c \in [2.63, 4.9]$, and $d \in [-7, 4]$

D. $a \in [17.09, 19.35]$, $b \in [-8, -4]$, $c \in [1.61, 3.66]$, and $d \in [-7, 4]$

E. None of the above.

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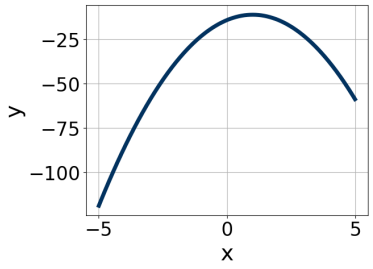
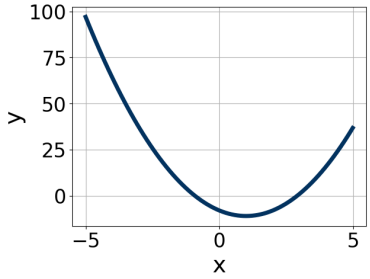
8. Graph the equation below.

$$f(x) = (x+1)^2 - 11$$

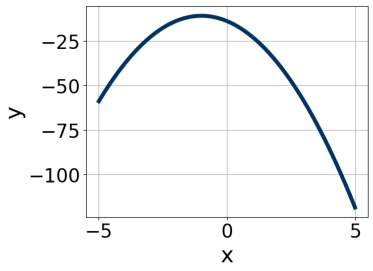
A.



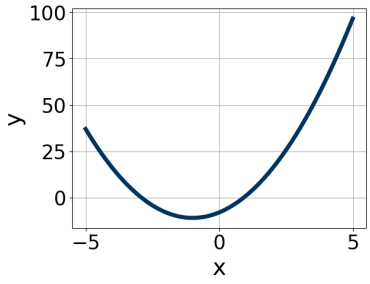
C.



B.



D.



E. None of the above.

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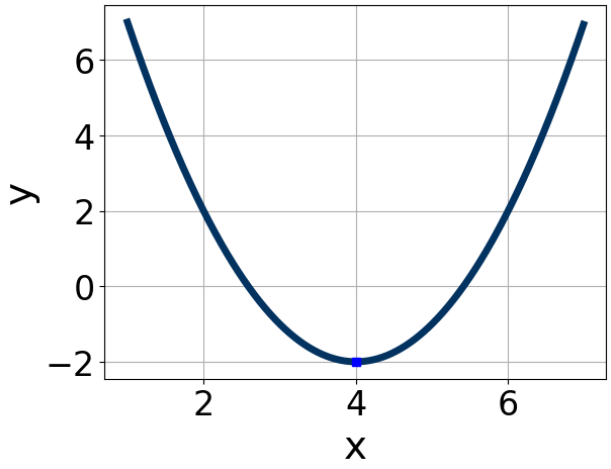
9. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-4, 0]$, $b \in [-9, -7]$, and $c \in [-19, -14]$

B. $a \in [-4, 0]$, $b \in [7, 10]$, and $c \in [-19, -14]$

C. $a \in [0, 5], \quad b \in [7, 10], \text{ and } \quad c \in [13, 15]$

D. $a \in [0, 5], \quad b \in [7, 10], \text{ and } \quad c \in [18, 21]$

E. $a \in [0, 5], \quad b \in [-9, -7], \text{ and } \quad c \in [13, 15]$

---

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

$$10x^2 - 57x + 54 = 0$$

A. $x_1 \in [11.91, 12.15]$ and $x_2 \in [43.44, 45.42]$

B. $x_1 \in [-0.16, 0.5]$ and $x_2 \in [12.69, 13.52]$

C. $x_1 \in [0.72, 1.03]$ and $x_2 \in [5.54, 7.31]$

D. $x_1 \in [1.29, 1.61]$ and $x_2 \in [1.9, 3.63]$

E. $x_1 \in [1.04, 1.26]$ and $x_2 \in [3.78, 5.27]$
