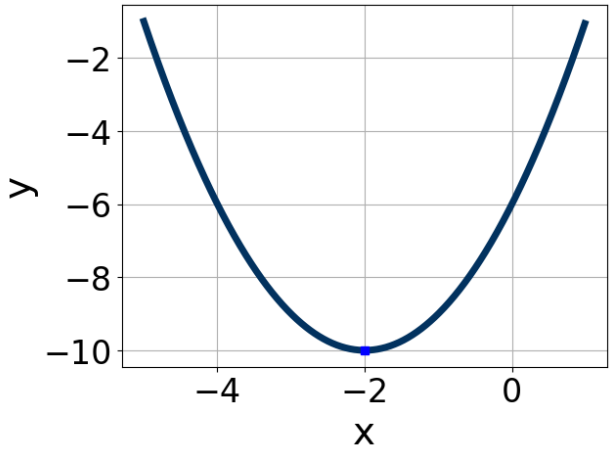
1. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [0.6, 1.4]$, $b \in [4, 5]$, and $c \in [-9, -5]$

B. $a \in [0.6, 1.4]$, $b \in [-4, -1]$, and $c \in [-9, -5]$

C. $a \in [0.6, 1.4]$, $b \in [-4, -1]$, and $c \in [13, 18]$

D. $a \in [-2.9, 0.6]$, $b \in [-4, -1]$, and $c \in [-16, -9]$

E. $a \in [-2.9, 0.6]$, $b \in [4, 5]$, and $c \in [-16, -9]$

---

2. 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. $a \in [1.26, 2.42]$, $b \in [5, 6]$, $c \in [14.8, 22]$, and $d \in [2, 13]$

B. $a \in [5.78, 7.46]$, $b \in [5, 6]$, $c \in [3.4, 7.2]$, and $d \in [2, 13]$

C. $a \in [0.34, 1.84]$, $b \in [24, 31]$, $c \in [0, 2.4]$, and $d \in [30, 38]$

D. $a \in [11.81, 12.31]$, $b \in [5, 6]$, $c \in [1.9, 4]$, and $d \in [2, 13]$

E. None of the above.

---

3. 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. $x_1 \in [1.16, 1.43]$ and $x_2 \in [4.48, 5.26]$

B. $x_1 \in [1.37, 1.57]$ and $x_2 \in [3.19, 3.99]$

C. $x_1 \in [-0.08, 0.49]$ and $x_2 \in [13.28, 14.09]$

D. $x_1 \in [0.87, 1.18]$ and $x_2 \in [5.98, 6.39]$

E. $x_1 \in [11.77, 12.1]$ and $x_2 \in [44.4, 45.03]$

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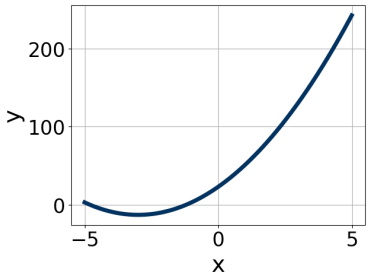
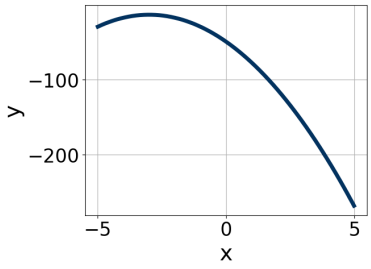
4. Graph the equation below.

$$f(x) = -(x+3)^2 - 13$$

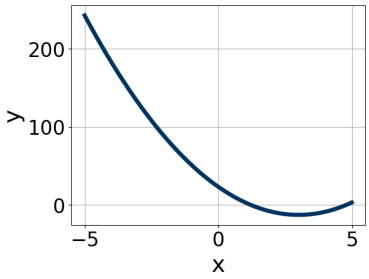
A.



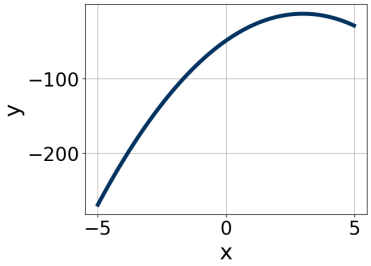
C.



B.



D.



E. None of the above.

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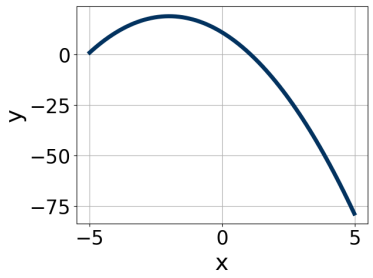
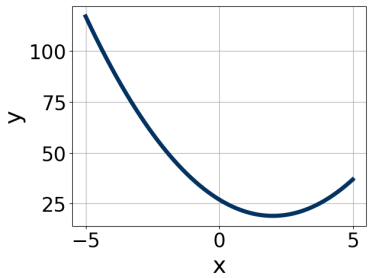
5. Graph the equation below.

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

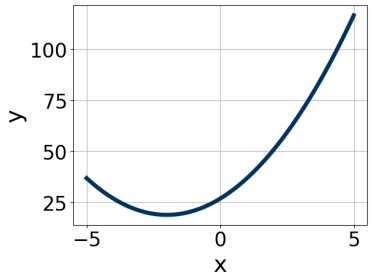
A.



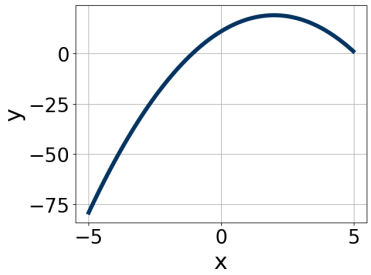
C.



B.



D.



E. None of the above.

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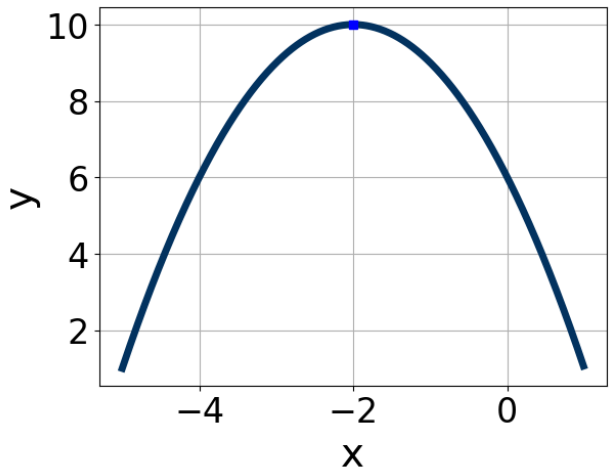
6. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-2, 0]$, $b \in [-5, -3]$, and $c \in [3, 8]$

B. $a \in [-2, 0]$, $b \in [1, 5]$, and $c \in [-15, -11]$

C. $a \in [-0.5, 1.2]$, $b \in [1, 5]$, and $c \in [14, 18]$

D. $a \in [-0.5, 1.2]$, $b \in [-5, -3]$, and $c \in [14, 18]$

E. $a \in [-2, 0]$, $b \in [1, 5]$, and $c \in [3, 8]$

---

7. 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. $x_1 \in [-12.3, -8.5]$ and $x_2 \in [-0.64, -0.58]$

B. $x_1 \in [-45.7, -42.8]$ and $x_2 \in [-12.01, -11.48]$

C. $x_1 \in [-16.5, -13.3]$ and $x_2 \in [-0.55, -0.36]$

D. $x_1 \in [-6.5, -2.9]$ and $x_2 \in [-1.39, -1.17]$

E. $x_1 \in [-3.1, -0.2]$ and $x_2 \in [-2.29, -2.04]$

---

8. 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. $a \in [1.72, 2.18]$, $b \in [-4, 5]$, $c \in [10.1, 12.1]$, and $d \in [0, 7]$

B. $a \in [3.56, 4.04]$, $b \in [-4, 5]$, $c \in [4.1, 8.7]$, and $d \in [0, 7]$

C. $a \in [0.92, 1.26]$, $b \in [-19, -11]$, $c \in [0.5, 1.4]$, and $d \in [18, 23]$

D. $a \in [7.74, 8.18]$, $b \in [-4, 5]$, $c \in [1.3, 5.8]$, and $d \in [0, 7]$

E. None of the above.

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

$$14x^2 + 7x - 4 = 0$$

A. $x_1 \in [-17.5, -16.15]$ and $x_2 \in [15.1, 17.1]$

B. $x_1 \in [-0.8, 0.16]$ and $x_2 \in [0.5, 1.4]$

C. $x_1 \in [-11.88, -11.23]$ and $x_2 \in [4.7, 6.1]$

D. $x_1 \in [-2.17, -0.36]$ and $x_2 \in [-1.6, 0.8]$

E. There are no Real solutions.

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

$$-15x^2 - 8x + 6 = 0$$

A. $x_1 \in [-6.6, -6.16]$ and $x_2 \in [13.6, 16]$

B. $x_1 \in [-1.19, -0.93]$ and $x_2 \in [-0.9, 0.8]$

C. $x_1 \in [-0.73, -0.03]$ and $x_2 \in [0.6, 2.6]$

D. $x_1 \in [-20.96, -20.58]$ and $x_2 \in [18.7, 20.4]$

E. There are no Real solutions.
