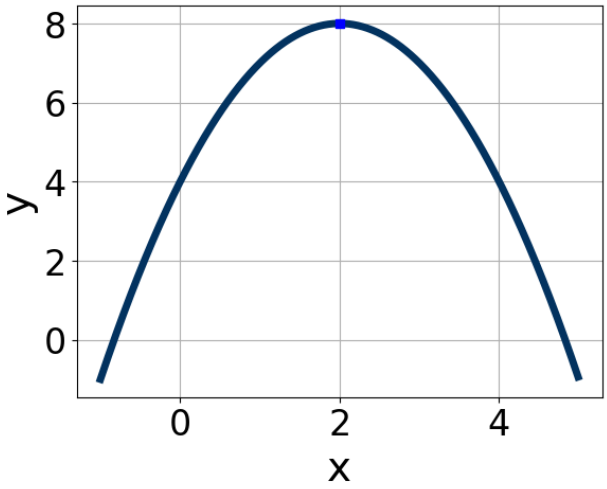
1. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-2, 0]$, $b \in [3, 6]$, and $c \in [2, 10]$

B. $a \in [0, 3]$, $b \in [-8, -3]$, and $c \in [11, 15]$

C. $a \in [-2, 0]$, $b \in [-8, -3]$, and $c \in [2, 10]$

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

E. $a \in [-2, 0]$, $b \in [-8, -3]$, and $c \in [-13, -11]$

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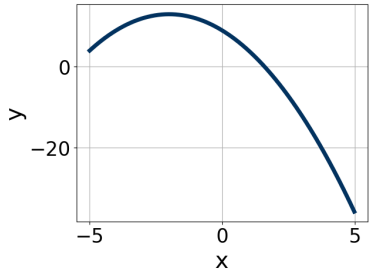
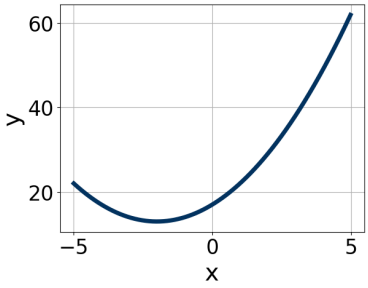
2. Graph the equation below.

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

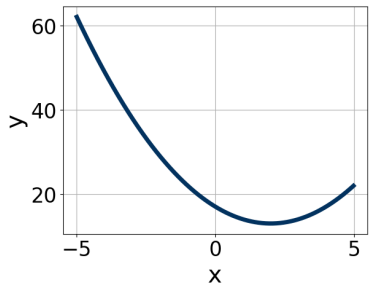
A.



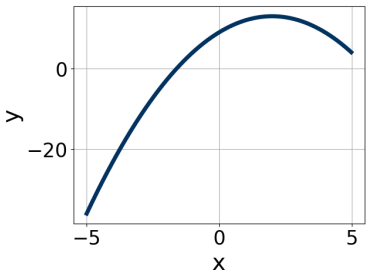
B.



C.



D.



E. None of the above.

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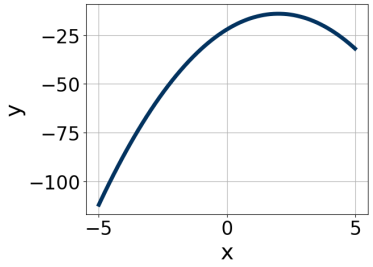
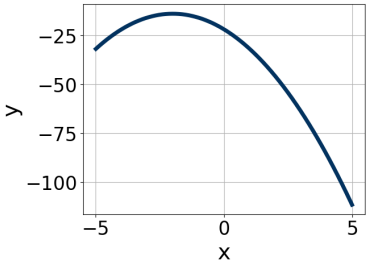
3. Graph the equation below.

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

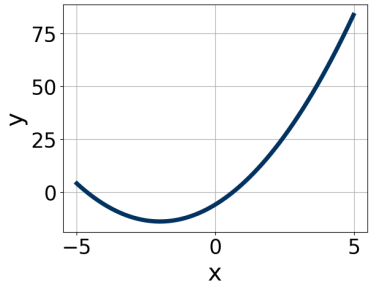
A.



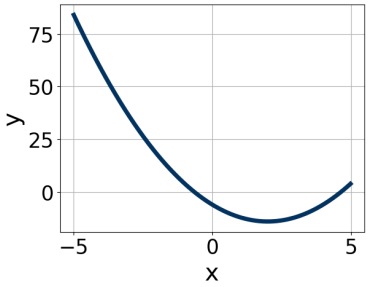
C.



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 $(ax+b)(cx+d); b \leq d$.

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

A. $a \in [-0.33, 1.55]$, $b \in [-22, -16]$, $c \in [0.9, 1.7]$, and $d \in [17, 23]$

B. $a \in [7.04, 8.3]$, $b \in [-6, 3]$, $c \in [2.4, 5.6]$, and $d \in [-2, 8]$

C. $a \in [3.68, 4.18]$, $b \in [-6, 3]$, $c \in [3.1, 8.8]$, and $d \in [-2, 8]$

D. $a \in [1.79, 3.16]$, $b \in [-6, 3]$, $c \in [11.1, 15]$, and $d \in [-2, 8]$

E. None of the above.

---

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

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

A. $a \in [10.4, 12.3]$, $b \in [-6, -1]$, $c \in [1.13, 3]$, and $d \in [2, 14]$

B. $a \in [-1.5, 1.6]$, $b \in [-23, -18]$, $c \in [0.32, 1.03]$, and $d \in [12, 22]$

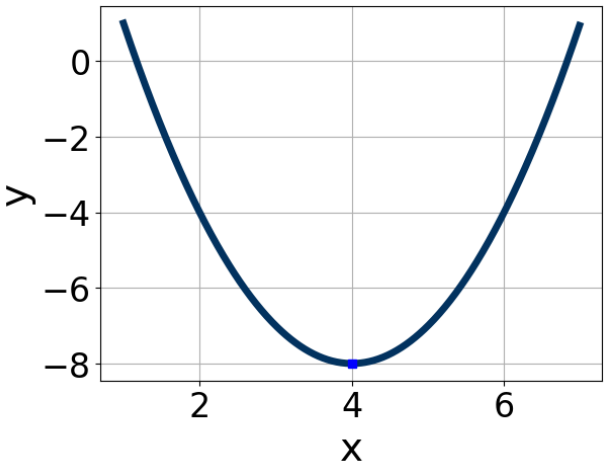
C. $a \in [1.8, 4.1]$, $b \in [-6, -1]$, $c \in [9.95, 13.55]$, and $d \in [2, 14]$

D. $a \in [5.4, 6.4]$, $b \in [-6, -1]$, $c \in [2.7, 5.28]$, and $d \in [2, 14]$

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. $a \in [1, 5]$, $b \in [6, 9]$, and $c \in [22, 25]$

B. $a \in [1, 5], \quad b \in [6, 9], \text{ and } \quad c \in [6, 10]$

C. $a \in [-3, 0], \quad b \in [6, 9], \text{ and } \quad c \in [-28, -23]$

D. $a \in [-3, 0], \quad b \in [-8, -6], \text{ and } \quad c \in [-28, -23]$

E. $a \in [1, 5], \quad b \in [-8, -6], \text{ and } \quad c \in [6, 10]$

---

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

$$10x^2 - 12x - 2 = 0$$

A. $x_1 \in [-1.62, -1.42]$ and $x_2 \in [12.5, 13.8]$

B. $x_1 \in [-14.51, -13.97]$ and $x_2 \in [15.1, 16.6]$

C. $x_1 \in [-0.21, 0.1]$ and $x_2 \in [0.5, 3.2]$

D. $x_1 \in [-1.47, -1.33]$ and $x_2 \in [-0.5, 0.3]$

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 $x_1 \leq x_2$.

$$25x^2 + 10x - 24 = 0$$

A. $x_1 \in [-4.3, -3.45]$ and $x_2 \in [0.22, 0.33]$

B. $x_1 \in [-30.14, -29.39]$ and $x_2 \in [19.97, 20.03]$

C. $x_1 \in [-6.56, -5.42]$ and $x_2 \in [0.09, 0.2]$

D. $x_1 \in [-0.74, -0.44]$ and $x_2 \in [1.54, 1.72]$

E. $x_1 \in [-1.48, -0.94]$ and $x_2 \in [0.78, 0.81]$

---

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

$$25x^2 + 10x - 24 = 0$$

A. $x_1 \in [-0.96, -0.54]$ and $x_2 \in [1.48, 1.68]$

B. $x_1 \in [-30.19, -29.58]$ and $x_2 \in [19.97, 20.16]$

C. $x_1 \in [-6.39, -5.98]$ and $x_2 \in [-0.05, 0.33]$

D. $x_1 \in [-1.21, -0.86]$ and $x_2 \in [0.76, 1.06]$

E. $x_1 \in [-3, -2.14]$ and $x_2 \in [0.37, 0.58]$

---

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

$$15x^2 + 10x - 2 = 0$$

A. $x_1 \in [-0.39, 0.01]$ and $x_2 \in [0.44, 1.42]$

B. $x_1 \in [-0.91, -0.37]$ and $x_2 \in [-0.35, 0.29]$

C. $x_1 \in [-15.2, -15]$ and $x_2 \in [13.79, 15.29]$

D. $x_1 \in [-13.24, -11.89]$ and $x_2 \in [2.14, 3.09]$

E. There are no Real solutions.
