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

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

A. $x_1 \in [-46.2, -42]$ and $x_2 \in [-12.33, -11.78]$

B. $x_1 \in [-10.5, -7.8]$ and $x_2 \in [-0.69, -0.43]$

C. $x_1 \in [-14.1, -12.5]$ and $x_2 \in [-0.49, -0.17]$

D. $x_1 \in [-2.7, 0]$ and $x_2 \in [-2.6, -2.15]$

E. $x_1 \in [-4.6, -4.1]$ and $x_2 \in [-1.37, -1.19]$

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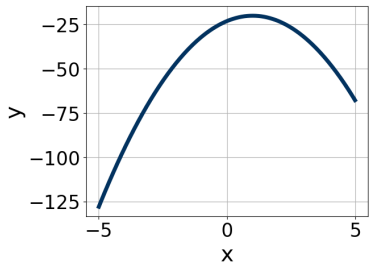
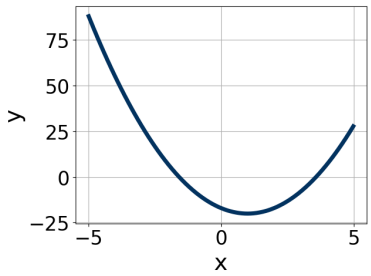
2. Graph the equation below.

$$f(x) = (x+1)^2 - 20$$

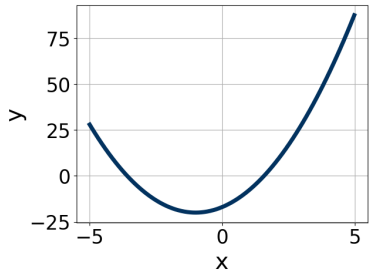
A.



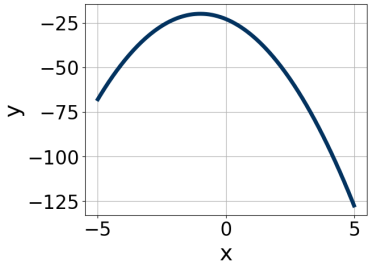
C.



B.



D.



E. None of the above.

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

$$-14x^2 + 12x + 8 = 0$$

A. $x_1 \in [-1.7, -0.5]$ and $x_2 \in [-1.1, 0.5]$

B. $x_1 \in [-18.5, -16.8]$ and $x_2 \in [5.9, 6.8]$

C. $x_1 \in [-0.9, -0.1]$ and $x_2 \in [1.1, 1.8]$

D. $x_1 \in [-25.3, -23.3]$ and $x_2 \in [24.5, 27]$

E. There are no Real solutions.

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

$$15x^2 - 8x - 16 = 0$$

A. $x_1 \in [-5.09, -3.54]$ and $x_2 \in [0.07, 0.36]$

B. $x_1 \in [-0.46, -0.16]$ and $x_2 \in [2.57, 2.78]$

C. $x_1 \in [-1.62, -0.85]$ and $x_2 \in [0.61, 0.8]$

D. $x_1 \in [-12.62, -9.94]$ and $x_2 \in [19.51, 20.25]$

E. $x_1 \in [-1.26, -0.63]$ and $x_2 \in [1.09, 1.69]$

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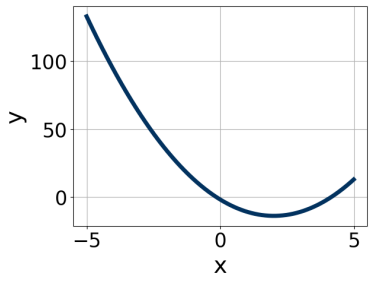
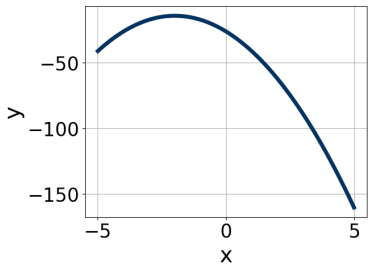
5. Graph the equation below.

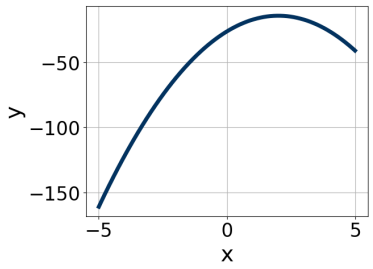
$$f(x) = (x+2)^2 - 14$$

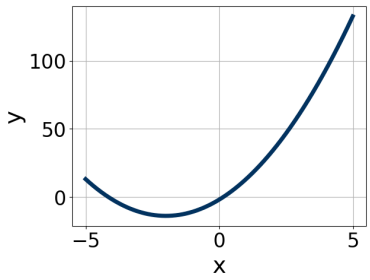
A.



B.



C. 

D. 

E. None of the above.

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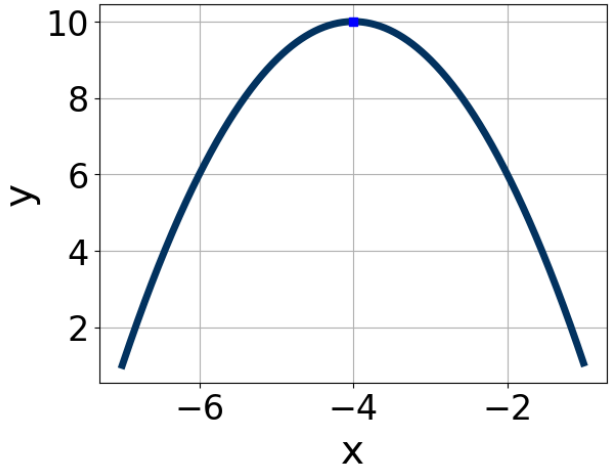
6. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-2.3, -0.2]$, $b \in [7, 11]$, and $c \in [-30, -24]$

B. $a \in [-0.6, 2.5]$, $b \in [7, 11]$, and $c \in [26, 28]$

C. $a \in [-2.3, -0.2]$, $b \in [-9, -6]$, and $c \in [-7, -3]$

D. $a \in [-2.3, -0.2]$, $b \in [7, 11]$, and $c \in [-7, -3]$

E. $a \in [-0.6, 2.5]$, $b \in [-9, -6]$, and $c \in [26, 28]$

---

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

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

A. $a \in [4, 7.5]$, $b \in [-1, 10]$, $c \in [3.7, 8.2]$, and $d \in [5, 6]$

B. $a \in [10, 13.3]$, $b \in [-1, 10]$, $c \in [1.3, 3.4]$, and $d \in [5, 6]$

C. $a \in [1.8, 3.2]$, $b \in [-1, 10]$, $c \in [8.4, 12.3]$, and $d \in [5, 6]$

D. $a \in [0.7, 2.8]$, $b \in [29, 37]$, $c \in [-0.5, 1.6]$, and $d \in [29, 34]$

E. None of the above.

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

$$24x^2 - 10x - 25$$

A. $a \in [3.69, 5.18]$, $b \in [-9, -3]$, $c \in [4.6, 7.5]$, and $d \in [2, 14]$

B. $a \in [1.01, 2.09]$, $b \in [-9, -3]$, $c \in [11.2, 15.8]$, and $d \in [2, 14]$

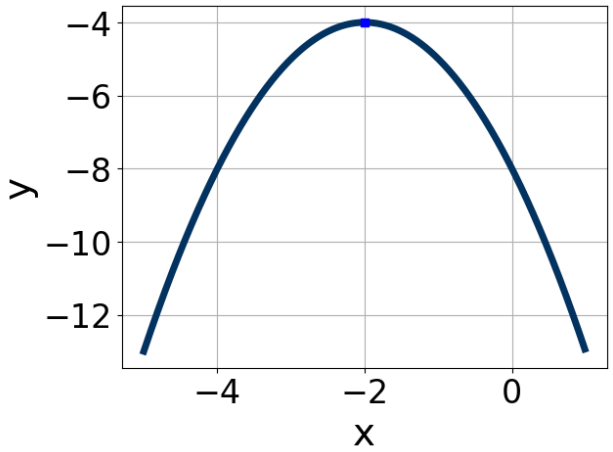
C. $a \in [7.86, 8.2]$, $b \in [-9, -3]$, $c \in [2.3, 3.7]$, and $d \in [2, 14]$

D. $a \in [0.89, 1.78]$, $b \in [-33, -27]$, $c \in [-1.9, 2.5]$, and $d \in [20, 25]$

E. None of the above.

---

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. $a \in [0.7, 3.1], \quad b \in [-6, 0], \text{ and } \quad c \in [-2, 3]$

B. $a \in [-1.5, -0.3], \quad b \in [3, 6], \text{ and } \quad c \in [-2, 3]$

C. $a \in [-1.5, -0.3], \quad b \in [-6, 0], \text{ and } \quad c \in [-8, -6]$

D. $a \in [0.7, 3.1], \quad b \in [3, 6], \text{ and } \quad c \in [-2, 3]$

E. $a \in [-1.5, -0.3], \quad b \in [3, 6], \text{ and } \quad c \in [-8, -6]$

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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).

$$14x^2 - 9x - 2 = 0$$

A. $x_1 \in [-1.24, -0.76]$ and $x_2 \in [-0.06, 0.78]$

B. $x_1 \in [-0.49, 0.03]$ and $x_2 \in [0.81, 1.43]$

C. $x_1 \in [-14.04, -12.76]$ and $x_2 \in [13.1, 14.86]$

D. $x_1 \in [-3.19, -2.28]$ and $x_2 \in [10.49, 12.03]$

E. There are no Real solutions.
