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

$$20x^2 + 69x + 54 = 0$$

A. $x_1 \in [-4.55, -4.41]$ and $x_2 \in [-0.72, -0.6]$

B. $x_1 \in [-45.28, -44.69]$ and $x_2 \in [-24.1, -23.91]$

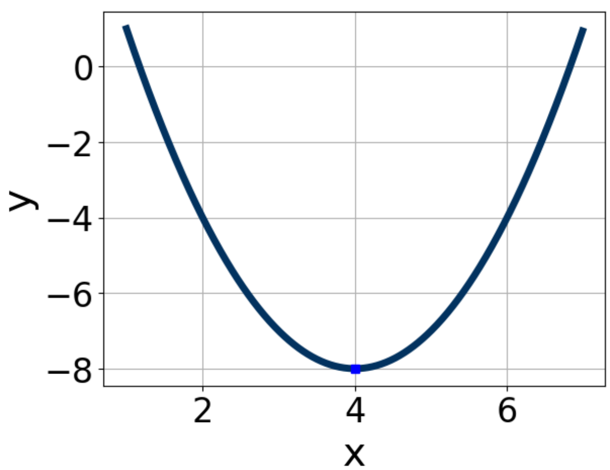
C. $x_1 \in [-2.84, -1.36]$ and $x_2 \in [-1.21, -1.17]$

D. $x_1 \in [-9.86, -8.53]$ and $x_2 \in [-0.34, -0.11]$

E. $x_1 \in [-3.95, -3.52]$ and $x_2 \in [-0.81, -0.68]$

---

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. $a \in [0, 2], \quad b \in [-9, -7], \text{ and } \quad c \in [6, 9]$

B. $a \in [-5, 0], \quad b \in [-9, -7], \text{ and } \quad c \in [-28, -22]$

C. $a \in [0, 2], \quad b \in [6, 12], \text{ and } \quad c \in [6, 9]$

D. $a \in [-5, 0], \quad b \in [6, 12], \text{ and } \quad c \in [-28, -22]$

E. $a \in [0, 2], \quad b \in [6, 12], \text{ and } \quad c \in [24, 27]$

---

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

$$20x^2 - 12x - 9 = 0$$

A. $x_1 \in [-29.65, -28.46]$ and $x_2 \in [29.54, 30.7]$

B. $x_1 \in [-0.6, -0.14]$ and $x_2 \in [0.44, 1.97]$

C. $x_1 \in [-9.31, -8.17]$ and $x_2 \in [20.25, 21.48]$

D. $x_1 \in [-1.33, -0.95]$ and $x_2 \in [0.38, 0.91]$

E. There are no Real solutions.

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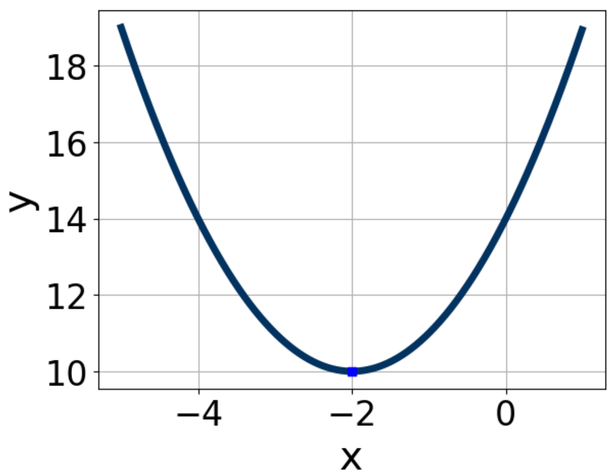
4. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [-1, 0], \quad b \in [1, 9], \text{ and } \quad c \in [3, 7]$

B. $a \in [0, 3], \quad b \in [-7, -1], \text{ and } \quad c \in [12, 17]$

C. $a \in [0, 3], \quad b \in [1, 9], \text{ and } \quad c \in [12, 17]$

D. $a \in [0, 3], \quad b \in [-7, -1], \text{ and } \quad c \in [-6, -2]$

E. $a \in [-1, 0], \quad b \in [-7, -1], \text{ and } \quad c \in [3, 7]$

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

$$-12x^2 - 7x + 3 = 0$$

A. $x_1 \in [-0.53, -0.26]$ and $x_2 \in [0.67, 1.29]$

B. $x_1 \in [-15.04, -14.04]$ and $x_2 \in [12.58, 14.45]$

C. $x_1 \in [-3.9, -3.28]$ and $x_2 \in [10.4, 11.5]$

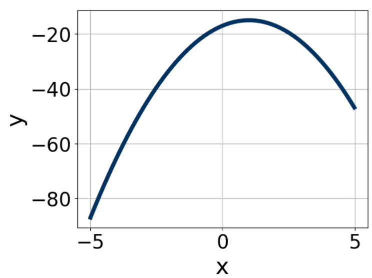
D. $x_1 \in [-1.84, -0.6]$ and $x_2 \in [-0.37, 0.86]$

E. There are no Real solutions.

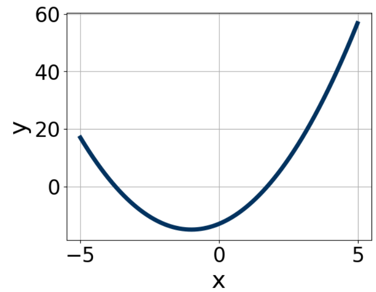
---

6. Graph the equation below.

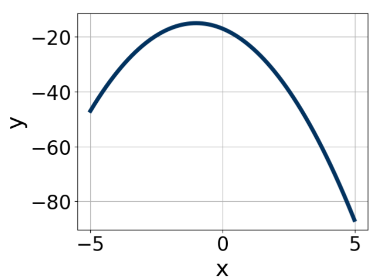
$$f(x) = -(x+1)^2 - 15$$



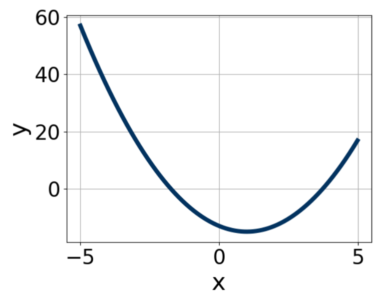
A.



C.



B.



D.

E. None of the above.

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

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

A. $x_1 \in [-20.32, -19.63]$ and $x_2 \in [17.74, 19.67]$

B. $x_1 \in [-1.79, -1.02]$ and $x_2 \in [1.02, 1.57]$

C. $x_1 \in [-4.01, -3.93]$ and $x_2 \in [-0.24, 0.53]$

D. $x_1 \in [-2.95, -2.34]$ and $x_2 \in [0.5, 0.82]$

E. $x_1 \in [-0.95, -0.22]$ and $x_2 \in [3.3, 4.35]$

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

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

A. $a \in [10.31, 12.56], \quad b \in [4, 10], \quad c \in [1.67, 3.04], \text{ and } \quad d \in [5, 7]$

B. $a \in [0.28, 1.33], \quad b \in [12, 24], \quad c \in [-0.29, 1.88], \text{ and } \quad d \in [29, 32]$

C. $a \in [1.11, 3.63], \quad b \in [4, 10], \quad c \in [10.61, 12.95], \text{ and } \quad d \in [5, 7]$

D. $a \in [2.98, 4.99], \quad b \in [4, 10], \quad c \in [5.81, 7.5], \text{ and } \quad d \in [5, 7]$

E. None of the above.

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9. 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. $a \in [2.4, 4.7], \quad b \in [-8, -2], \quad c \in [10.18, 13.1], \text{ and } \quad d \in [-8, -4]$

B. $a \in [16.3, 18.1], \quad b \in [-8, -2], \quad c \in [1.76, 2.44], \text{ and } \quad d \in [-8, -4]$

C. $a \in [-1.6, 1.7], \quad b \in [-30, -21], \quad c \in [0.16, 1.82], \text{ and } \quad d \in [-30, -27]$

D. $a \in [4.6, 9.6], \quad b \in [-8, -2], \quad c \in [4.79, 6.93], \text{ and } \quad d \in [-8, -4]$

E. None of the above.

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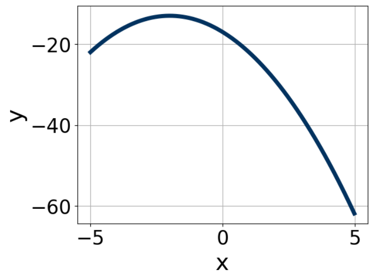
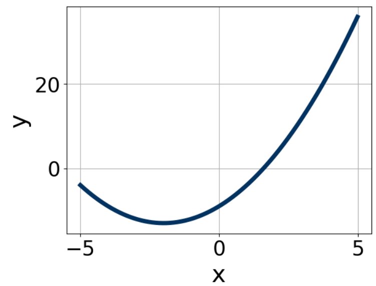
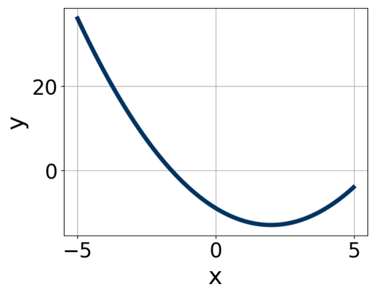
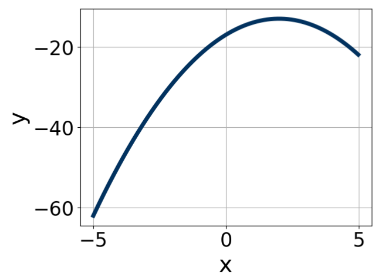
10. Graph the equation below.

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

A. 

C. 

B. 

D. 

E. None of the above.