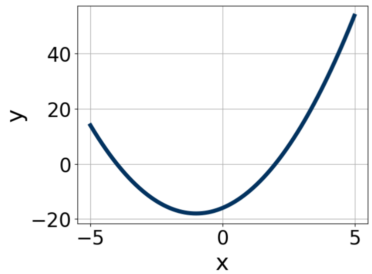
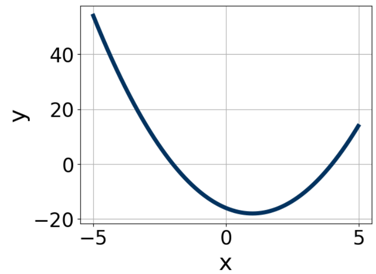
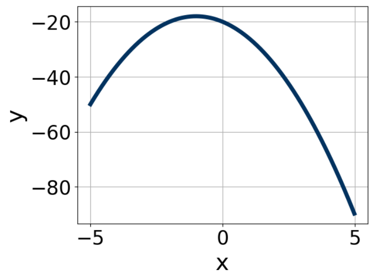
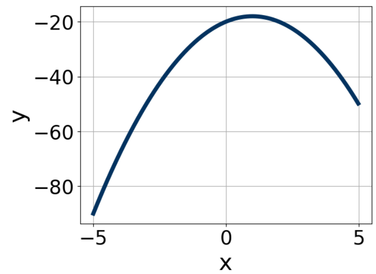
1. Graph the equation below.

$$f(x) = (x+1)^2 - 18$$

A. 

C. 

B. 

D. 

E. None of the above.

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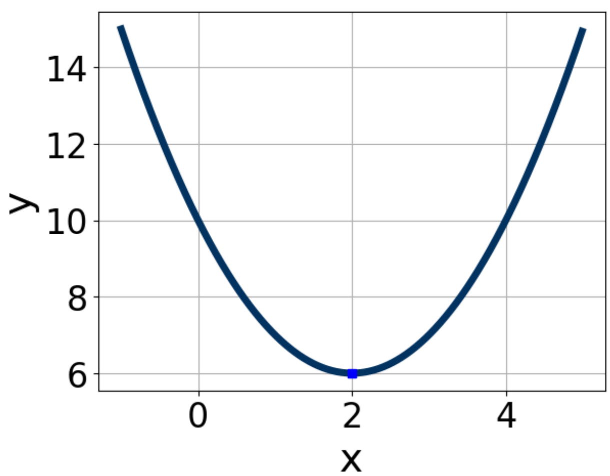
2. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [1, 3], \quad b \in [4, 5], \text{ and } \quad c \in [7, 15]$

B. $a \in [1, 3], \quad b \in [4, 5], \text{ and } \quad c \in [-3, -1]$

C. $a \in [-1, 0], \quad b \in [-8, -1], \text{ and } \quad c \in [1, 4]$

D. $a \in [-1, 0], \quad b \in [4, 5], \text{ and } \quad c \in [1, 4]$

E. $a \in [1, 3], \quad b \in [-8, -1], \text{ and } \quad c \in [7, 15]$

---

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

$$25x^2 + 50x + 24 = 0$$

A. $x_1 \in [-30.53, -29.87]$ and $x_2 \in [-20, -19.97]$

B. $x_1 \in [-1.66, -1.29]$ and $x_2 \in [-0.7, -0.51]$

C. $x_1 \in [-1.33, -1.13]$ and $x_2 \in [-0.88, -0.74]$

D. $x_1 \in [-2.57, -1.79]$ and $x_2 \in [-0.46, -0.23]$

E. $x_1 \in [-6.85, -5.53]$ and $x_2 \in [-0.23, -0.13]$

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

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

A. $x_1 \in [-1.75, -0.34]$ and $x_2 \in [0.04, 0.29]$

B. $x_1 \in [-0.57, 0.68]$ and $x_2 \in [1.05, 1.43]$

C. $x_1 \in [-15.94, -15.57]$ and $x_2 \in [1.72, 2.15]$

D. $x_1 \in [-17.29, -15.97]$ and $x_2 \in [17.86, 18.31]$

E. There are no Real solutions.

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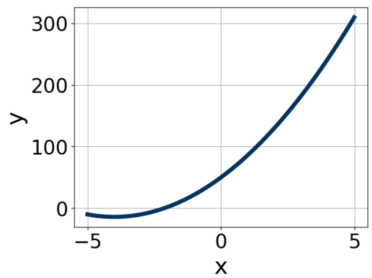
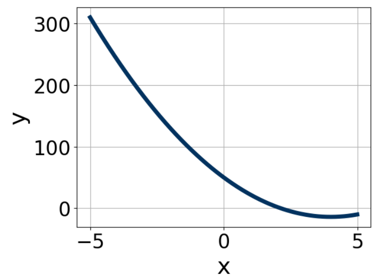
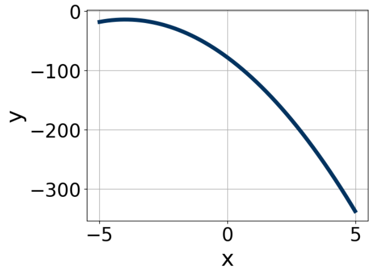
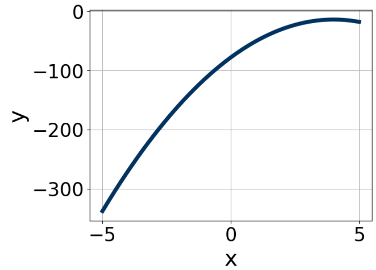
5. Graph the equation below.

$$f(x) = (x + 4)^2 - 14$$

A. 

C. 

B. 

D. 

E. None of the above.

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

$$81x^2 - 54x + 8$$

A. $a \in [8.4, 9.6], \quad b \in [-5, -3], \quad c \in [8, 14], \text{ and } \quad d \in [-4, 1]$

B. $a \in [26.7, 28.6], \quad b \in [-5, -3], \quad c \in [2, 5], \text{ and } \quad d \in [-4, 1]$

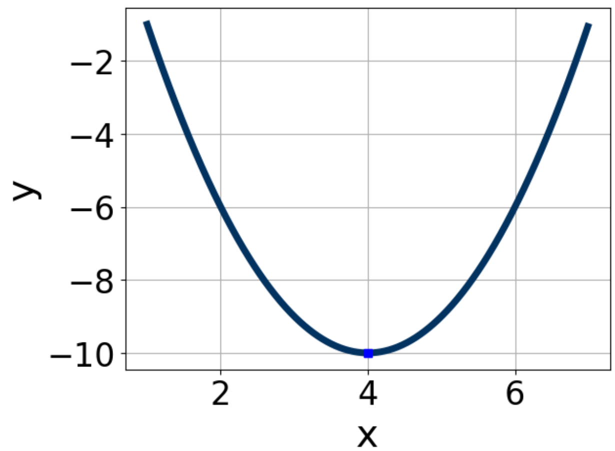
C. $a \in [-1.7, 1.6], \quad b \in [-40, -31], \quad c \in [0, 2], \text{ and } \quad d \in [-24, -16]$

D. $a \in [2.8, 4.7], \quad b \in [-5, -3], \quad c \in [20, 30], \text{ and } \quad d \in [-4, 1]$

E. None of the above.

---

7. 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. $a \in [-2.6, 0.2], \quad b \in [8, 9], \text{ and } \quad c \in [-28, -23]$

B. $a \in [0.5, 3.6], \quad b \in [8, 9], \text{ and } \quad c \in [4, 7]$

C. $a \in [-2.6, 0.2], \quad b \in [-9, -5], \text{ and } \quad c \in [-28, -23]$

D. $a \in [0.5, 3.6], \quad b \in [-9, -5], \text{ and } \quad c \in [4, 7]$

E. $a \in [0.5, 3.6], \quad b \in [8, 9], \text{ and } \quad c \in [24, 28]$

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

$$81x^2 + 18x - 8$$

A. $a \in [24.4, 27.2], \quad b \in [-6, 1], \quad c \in [1.7, 3.4], \text{ and } \quad d \in [4, 5]$

B. $a \in [8.5, 9.8], \quad b \in [-6, 1], \quad c \in [8.6, 10.4], \text{ and } \quad d \in [4, 5]$

C. $a \in [2.9, 3.9], \quad b \in [-6, 1], \quad c \in [25.7, 28.6], \text{ and } \quad d \in [4, 5]$

D. $a \in [0.3, 1.6], \quad b \in [-24, -15], \quad c \in [-0.1, 2.8], \text{ and } \quad d \in [31, 38]$

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).

$$10x^2 + 14x + 2 = 0$$

A. $x_1 \in [-12.2, -9]$ and $x_2 \in [9.7, 11.2]$

B. $x_1 \in [-14.1, -12]$ and $x_2 \in [-2.3, -1.5]$

C. $x_1 \in [-1.6, -0.4]$ and $x_2 \in [-0.6, 0.6]$

D. $x_1 \in [0, 1.4]$ and $x_2 \in [0.5, 1.9]$

E. There are no Real solutions.

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

$$12x^2 + 43x + 36 = 0$$

A. $x_1 \in [-2.47, -0.85]$ and $x_2 \in [-1.41, -1.23]$

B. $x_1 \in [-27.71, -26.78]$ and $x_2 \in [-16.07, -15.98]$

C. $x_1 \in [-3.42, -2.66]$ and $x_2 \in [-1.26, -0.96]$

D. $x_1 \in [-7.02, -6.44]$ and $x_2 \in [-0.62, -0.38]$

E. $x_1 \in [-9.86, -7.86]$ and $x_2 \in [-0.41, -0.26]$
