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

$$15x^2 + 9x - 7 = 0$$

A. $x_1 \in [-2.42, -0.9]$ and $x_2 \in [0.02, 0.96]$

B. $x_1 \in [-0.56, 0.21]$ and $x_2 \in [0.94, 1.53]$

C. $x_1 \in [-16.3, -14.88]$ and $x_2 \in [6.11, 7.83]$

D. $x_1 \in [-23.86, -22.06]$ and $x_2 \in [21.62, 22.39]$

E. There are no Real solutions.

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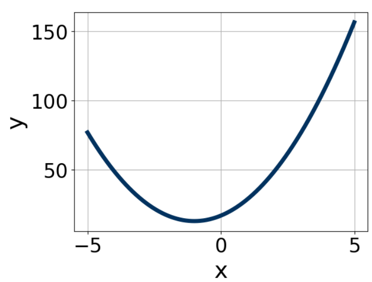
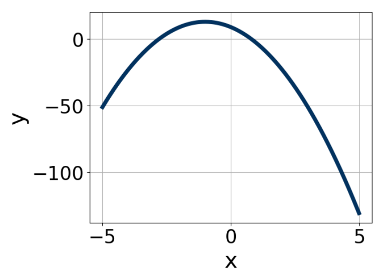
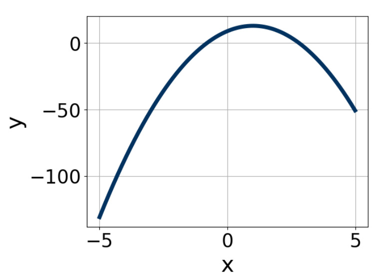
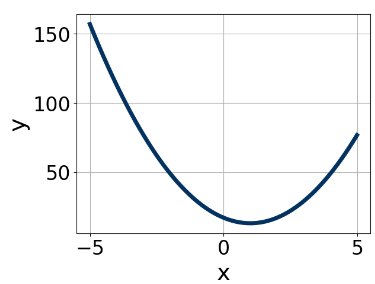
2. Graph the equation below.

$$f(x) = -(x-1)^2 + 13$$

A. 

C. 

B. 

D. 

E. None of the above.

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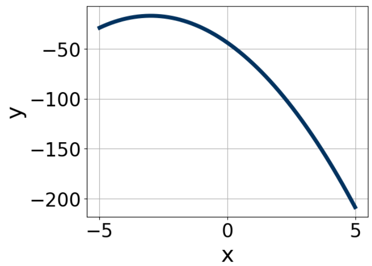
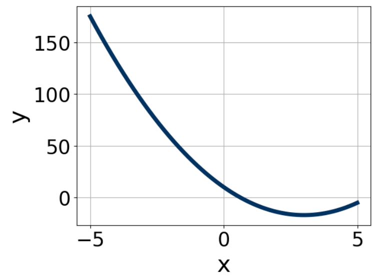
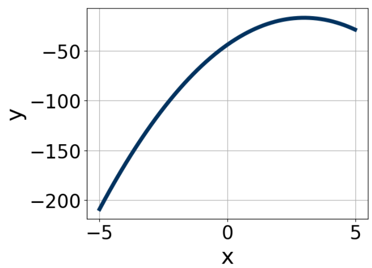
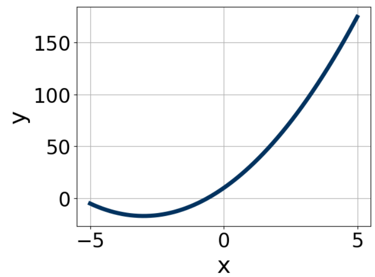
3. Graph the equation below.

$$f(x) = (x+3)^2 - 17$$

A. 

C. 

B. 

D. 

E. None of the above.

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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 $x_1 \leq x_2$.

$$10x^2 - 33x - 54 = 0$$

A. $x_1 \in [-1.56, -1]$ and $x_2 \in [4.25, 4.7]$

B. $x_1 \in [-4.03, -3.41]$ and $x_2 \in [1.41, 2.06]$

C. $x_1 \in [-6.05, -5.41]$ and $x_2 \in [0.5, 1.06]$

D. $x_1 \in [-12.11, -11.79]$ and $x_2 \in [44.85, 45.1]$

E. $x_1 \in [-0.64, -0.36]$ and $x_2 \in [12.88, 13.71]$

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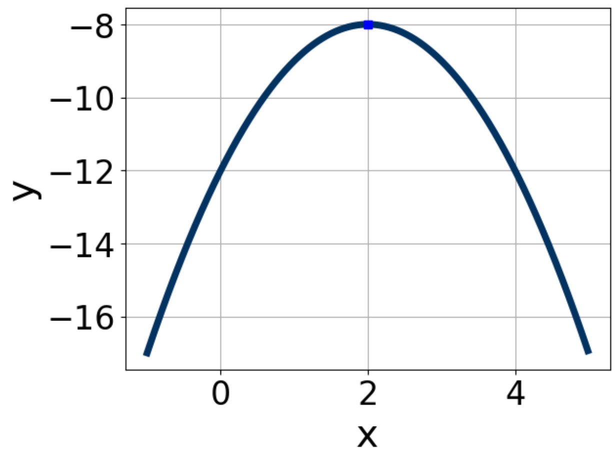
5. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [0.2, 2.3], \quad b \in [-7, -3], \text{ and } \quad c \in [-6, -2]$

B. $a \in [-1.5, -0.4], \quad b \in [2, 5], \text{ and } \quad c \in [-14, -8]$

C. $a \in [-1.5, -0.4], \quad b \in [-7, -3], \text{ and } \quad c \in [-14, -8]$

D. $a \in [-1.5, -0.4], \quad b \in [-7, -3], \text{ and } \quad c \in [0, 6]$

E. $a \in [0.2, 2.3], \quad b \in [2, 5], \text{ and } \quad c \in [-6, -2]$

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

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

A. $a \in [0.6, 1.05], \quad b \in [27, 33], \quad c \in [0.97, 1.13], \text{ and } \quad d \in [26, 38]$

B. $a \in [2.43, 4.04], \quad b \in [1, 10], \quad c \in [11.16, 12.86], \text{ and } \quad d \in [3, 6]$

C. $a \in [11.96, 12.5], \quad b \in [1, 10], \quad c \in [2.71, 3.3], \text{ and } \quad d \in [3, 6]$

D. $a \in [5.99, 6.49], \quad b \in [1, 10], \quad c \in [4.07, 6.43], \text{ and } \quad d \in [3, 6]$

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. $x_1 \in [-0.97, -0.15]$ and $x_2 \in [3.89, 4.59]$

B. $x_1 \in [-6.31, -5.96]$ and $x_2 \in [0.04, 0.34]$

C. $x_1 \in [-18.67, -15.63]$ and $x_2 \in [19.39, 20.5]$

D. $x_1 \in [-3.62, -2.06]$ and $x_2 \in [0.51, 0.73]$

E. $x_1 \in [-2.36, -1.11]$ and $x_2 \in [1.03, 1.64]$

---

8. 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. $a \in [5.81, 7.04], \quad b \in [-1, 8], \quad c \in [5.74, 8.31], \text{ and } \quad d \in [5, 6]$

B. $a \in [2.71, 4.49], \quad b \in [-1, 8], \quad c \in [11.27, 12.45], \text{ and } \quad d \in [5, 6]$

C. $a \in [0.63, 1.49], \quad b \in [26, 33], \quad c \in [0.61, 1.01], \text{ and } \quad d \in [28, 33]$

D. $a \in [16.36, 19.03], \quad b \in [-1, 8], \quad c \in [1.34, 3.05], \text{ and } \quad d \in [5, 6]$

E. None of the above.

---

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

$$-10x^2 + 15x + 4 = 0$$

A. $x_1 \in [-0.7, 1.2]$ and $x_2 \in [1, 2.1]$

B. $x_1 \in [-19.1, -18.1]$ and $x_2 \in [19, 21.8]$

C. $x_1 \in [-2.9, -0.4]$ and $x_2 \in [0.1, 0.9]$

D. $x_1 \in [-18.5, -16.1]$ and $x_2 \in [2.2, 3.1]$

E. There are no Real solutions.

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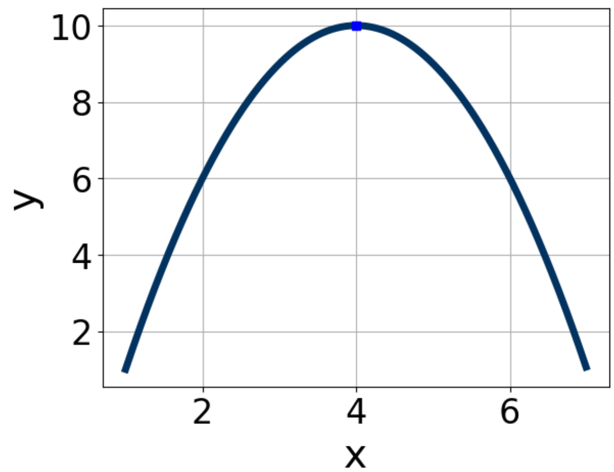
10. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [-2, 0], \quad b \in [-8, -7], \text{ and } \quad c \in [-6, -4]$

B. $a \in [0, 4], \quad b \in [-8, -7], \text{ and } \quad c \in [25, 27]$

C. $a \in [0, 4], \quad b \in [7, 12], \text{ and } \quad c \in [25, 27]$

D. $a \in [-2, 0], \quad b \in [7, 12], \text{ and } \quad c \in [-6, -4]$

E. $a \in [-2, 0], \quad b \in [-8, -7], \text{ and } \quad c \in [-28, -22]$
