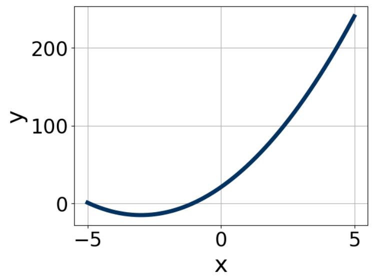
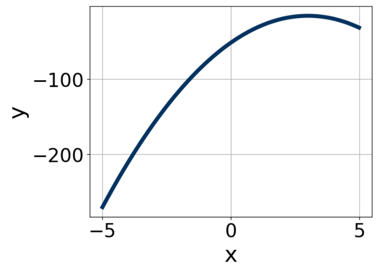
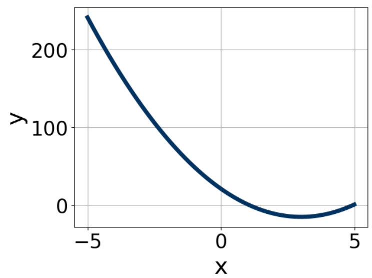
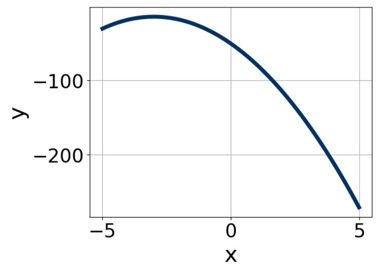
1. Graph the equation below.

$$f(x) = -(x+3)^2 - 15$$

A. 

C. 

B. 

D. 

E. None of the above.

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

$$13x^2 - 15x - 9 = 0$$

A. $x_1 \in [-25.8, -25.1]$ and $x_2 \in [26.9, 27.9]$

B. $x_1 \in [-0.8, -0.2]$ and $x_2 \in [0.59, 5.59]$

C. $x_1 \in [-2, -1]$ and $x_2 \in [-1.56, 1.44]$

D. $x_1 \in [-6.2, -4]$ and $x_2 \in [20.66, 21.66]$

E. There are no Real solutions.

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

$$20x^2 - 21x - 54 = 0$$

A. $x_1 \in [-24.6, -22.7]$ and $x_2 \in [44.91, 45.1]$

B. $x_1 \in [-7.2, -5.2]$ and $x_2 \in [0.28, 0.58]$

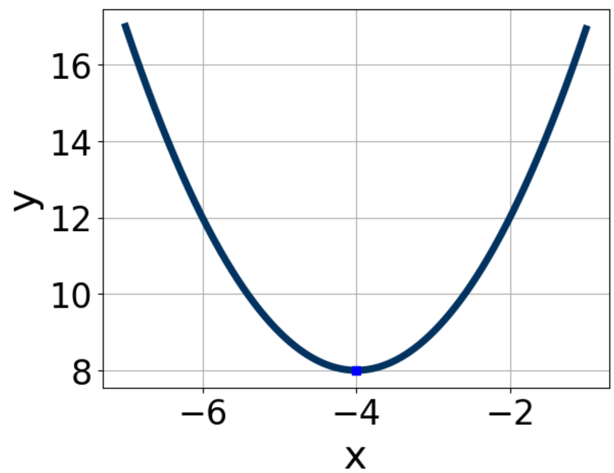
C. $x_1 \in [-5.6, -3.1]$ and $x_2 \in [0.71, 0.88]$

D. $x_1 \in [-0.8, 0.2]$ and $x_2 \in [4.21, 4.76]$

E. $x_1 \in [-2.2, -0.8]$ and $x_2 \in [2.11, 2.28]$

---

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. $a \in [1, 3], \quad b \in [-8, -5], \text{ and } \quad c \in [24, 25]$

B. $a \in [-1, 0], \quad b \in [8, 11], \text{ and } \quad c \in [-11, -5]$

C. $a \in [-1, 0], \quad b \in [-8, -5], \text{ and } \quad c \in [-11, -5]$

D. $a \in [1, 3], \quad b \in [8, 11], \text{ and } \quad c \in [24, 25]$

E. $a \in [1, 3], \quad b \in [-8, -5], \text{ and } \quad c \in [5, 11]$

---

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

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

A. $a \in [1.9, 4.7], \quad b \in [2, 5], \quad c \in [16.9, 18.5], \text{ and } \quad d \in [3, 8]$

B. $a \in [-0.1, 1.1], \quad b \in [10, 14], \quad c \in [-0.5, 1.5], \text{ and } \quad d \in [45, 49]$

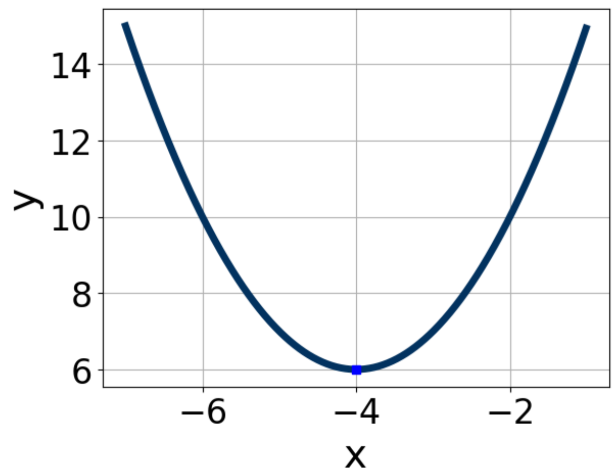
C. $a \in [7.6, 10.3], \quad b \in [2, 5], \quad c \in [4.3, 7], \text{ and } \quad d \in [3, 8]$

D. $a \in [24.8, 27.9], \quad b \in [2, 5], \quad c \in [1.3, 5.3], \text{ and } \quad d \in [3, 8]$

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. $a \in [-0.2, 2.1], \quad b \in [-12, -4], \text{ and } \quad c \in [10, 11]$

B. $a \in [-1.4, -0.3], \quad b \in [-12, -4], \text{ and } \quad c \in [-11, -6]$

C. $a \in [-0.2, 2.1], \quad b \in [8, 9], \text{ and } \quad c \in [21, 23]$

D. $a \in [-1.4, -0.3], \quad b \in [8, 9], \text{ and } \quad c \in [-11, -6]$

E. $a \in [-0.2, 2.1], \quad b \in [-12, -4], \text{ and } \quad c \in [21, 23]$

---

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

$$20x^2 + 21x - 54 = 0$$

A. $x_1 \in [-2.21, -0.53]$ and $x_2 \in [3.58, 3.65]$

B. $x_1 \in [-10.1, -8.13]$ and $x_2 \in [0.16, 0.36]$

C. $x_1 \in [-45.55, -44.54]$ and $x_2 \in [23.98, 24.04]$

D. $x_1 \in [-2.7, -1.57]$ and $x_2 \in [1.1, 1.3]$

E. $x_1 \in [-8.22, -5.57]$ and $x_2 \in [0.32, 0.42]$

---

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

$$24x^2 + 38x + 15$$

A. $a \in [3.4, 6.3], \quad b \in [-3, 6], \quad c \in [4.7, 8.3], \text{ and } \quad d \in [3, 7]$

B. $a \in [0.6, 3.5], \quad b \in [16, 24], \quad c \in [0.5, 1.8], \text{ and } \quad d \in [13, 24]$

C. $a \in [7, 8.3], \quad b \in [-3, 6], \quad c \in [1.5, 4.4], \text{ and } \quad d \in [3, 7]$

D. $a \in [0.6, 3.5], \quad b \in [-3, 6], \quad c \in [17.3, 18.6], \text{ and } \quad d \in [3, 7]$

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).

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

A. $x_1 \in [-11.71, -10.95]$ and $x_2 \in [2.21, 2.91]$

B. $x_1 \in [-1.03, -0.44]$ and $x_2 \in [-0.35, 0.73]$

C. $x_1 \in [-0.58, 0.38]$ and $x_2 \in [0.56, 0.92]$

D. $x_1 \in [-14.51, -14.09]$ and $x_2 \in [13.67, 14.35]$

E. There are no Real solutions.

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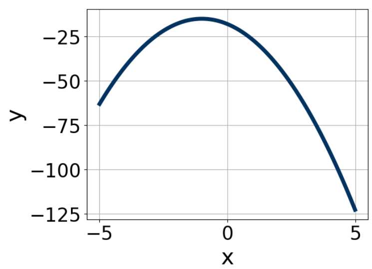
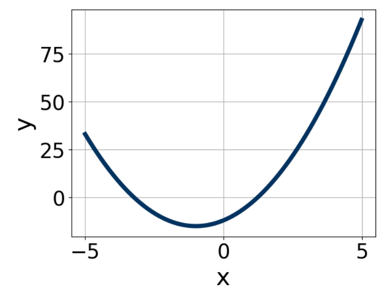
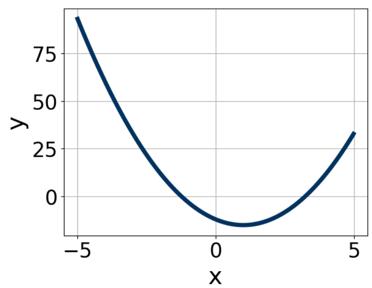
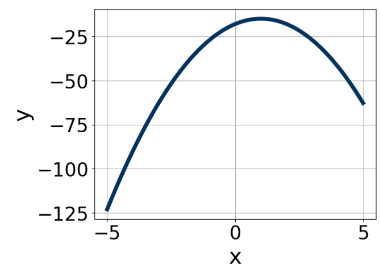
10. Graph the equation below.

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

A. 

C. 

B. 

D. 

E. None of the above.