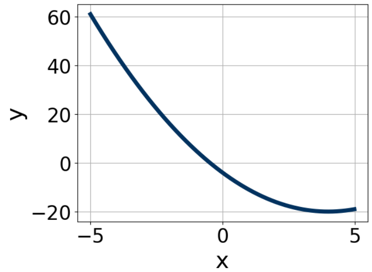
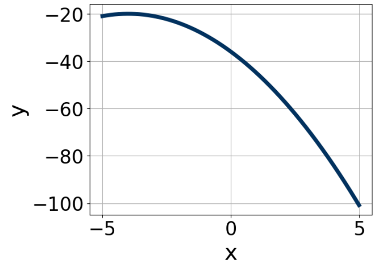
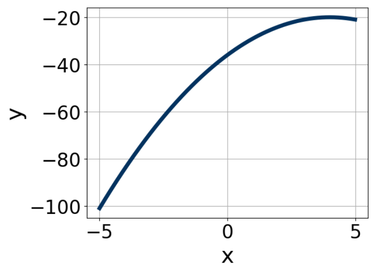
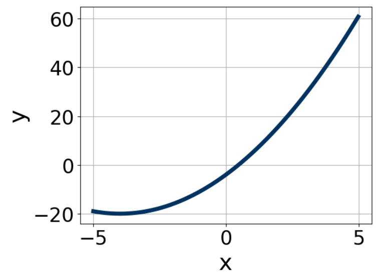
1. Graph the equation below.

$$f(x) = -(x-4)^2 - 20$$

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).

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

A. $x_1 \in [-2.44, -1.81]$ and $x_2 \in [16.5, 17.7]$

B. $x_1 \in [-0.73, -0.16]$ and $x_2 \in [0.5, 1.8]$

C. $x_1 \in [-20.62, -20.05]$ and $x_2 \in [18.7, 20.4]$

D. $x_1 \in [-1.97, -0.9]$ and $x_2 \in [-0.1, 0.8]$

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 $x_1 \leq x_2$.

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

A. $x_1 \in [1.02, 1.24]$ and $x_2 \in [2.99, 5.27]$

B. $x_1 \in [11.89, 12.18]$ and $x_2 \in [44.58, 45.71]$

C. $x_1 \in [0.3, 0.68]$ and $x_2 \in [13.03, 15.79]$

D. $x_1 \in [0.73, 1.14]$ and $x_2 \in [5.86, 6.19]$

E. $x_1 \in [2.24, 2.32]$ and $x_2 \in [1.89, 2.67]$

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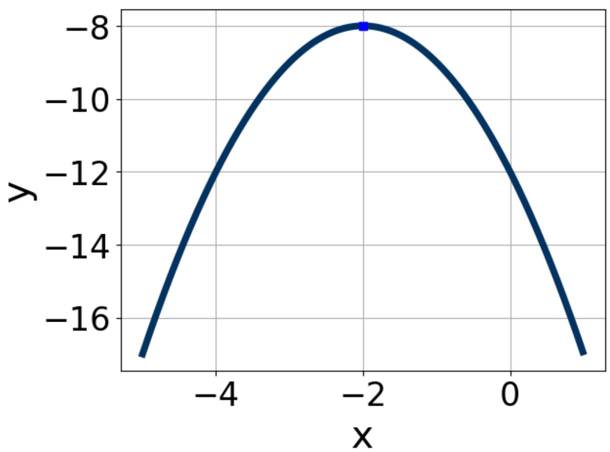
4. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [-4, 0], \quad b \in [2, 5], \text{ and } \quad c \in [2, 5]$

B. $a \in [-4, 0], \quad b \in [2, 5], \text{ and } \quad c \in [-17, -9]$

C. $a \in [0, 5], \quad b \in [2, 5], \text{ and } \quad c \in [-6, -2]$

D. $a \in [-4, 0], \quad b \in [-5, 0], \text{ and } \quad c \in [-17, -9]$

E. $a \in [0, 5], \quad b \in [-5, 0], \text{ and } \quad c \in [-6, -2]$

---

5. 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. $a \in [1.93, 3.39], \quad b \in [5, 8], \quad c \in [7.77, 8.04], \text{ and } \quad d \in [0, 7]$

B. $a \in [5.77, 7.19]$, $b \in [5, 8]$, $c \in [3.98, 4.48]$, and $d \in [0, 7]$

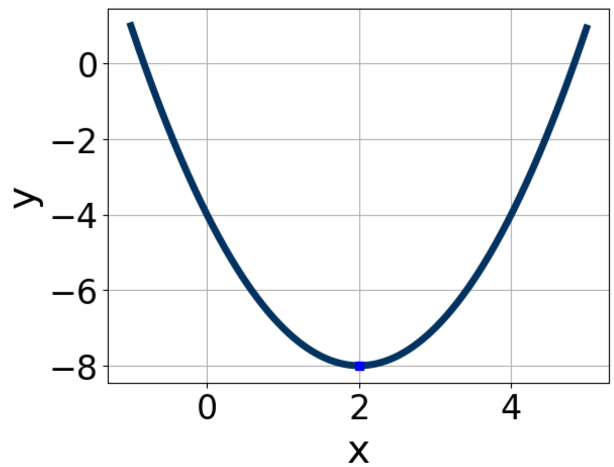
C. $a \in [10.85, 12.25]$, $b \in [5, 8]$, $c \in [1.48, 2.94]$, and $d \in [0, 7]$

D. $a \in [-0.37, 1.35]$, $b \in [16, 30]$, $c \in [0.52, 1.28]$, and $d \in [30, 32]$

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. $a \in [-1, 0]$, $b \in [0, 5]$, and $c \in [-15, -10]$

B. $a \in [0, 3]$, $b \in [-5, -2]$, and $c \in [-5, -1]$

C. $a \in [-1, 0]$, $b \in [-5, -2]$, and $c \in [-15, -10]$

D. $a \in [0, 3]$, $b \in [0, 5]$, and $c \in [-5, -1]$

E. $a \in [0, 3]$, $b \in [0, 5]$, and $c \in [10, 13]$

---

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

$$25x^2 - 60x + 36 = 0$$

A. $x_1 \in [0.11, 0.38]$ and $x_2 \in [5.32, 6.2]$

B. $x_1 \in [0.37, 0.4]$ and $x_2 \in [3.14, 4.16]$

C. $x_1 \in [0.54, 0.62]$ and $x_2 \in [1.85, 3.34]$

D. $x_1 \in [29.79, 30.05]$ and $x_2 \in [28.61, 30.86]$

E. $x_1 \in [1.06, 1.27]$ and $x_2 \in [-0.39, 1.21]$

---

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

$$54x^2 + 75x + 25$$

A. $a \in [2.5, 5.6], \quad b \in [-1, 11], \quad c \in [17.48, 18.73], \text{ and } \quad d \in [3, 6]$

B. $a \in [25.6, 27.6], \quad b \in [-1, 11], \quad c \in [1.6, 2.26], \text{ and } \quad d \in [3, 6]$

C. $a \in [-2.5, 2.9], \quad b \in [29, 34], \quad c \in [0.58, 1.26], \text{ and } \quad d \in [44, 47]$

D. $a \in [6, 9.5], \quad b \in [-1, 11], \quad c \in [5.79, 7.66], \text{ and } \quad d \in [3, 6]$

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).

$$-16x^2 - 8x + 7 = 0$$

A. $x_1 \in [-3.2, -0.6]$ and $x_2 \in [0.3, 0.64]$

B. $x_1 \in [-23.2, -22]$ and $x_2 \in [22.14, 23.22]$

C. $x_1 \in [-0.5, 1.4]$ and $x_2 \in [0.9, 1.34]$

D. $x_1 \in [-7.5, -6.5]$ and $x_2 \in [14.53, 15.65]$

E. There are no Real solutions.

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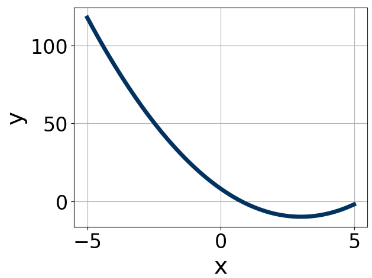
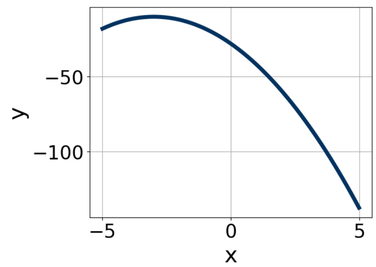
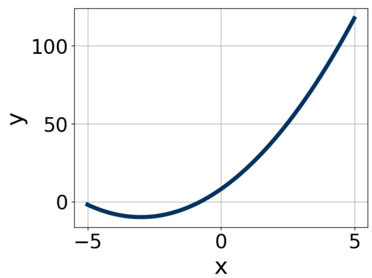
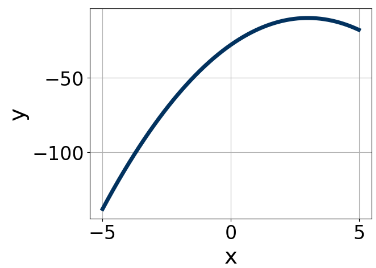
10. Graph the equation below.

$$f(x) = -(x+3)^2 - 10$$

A. 

C. 

B. 

D. 

E. None of the above.