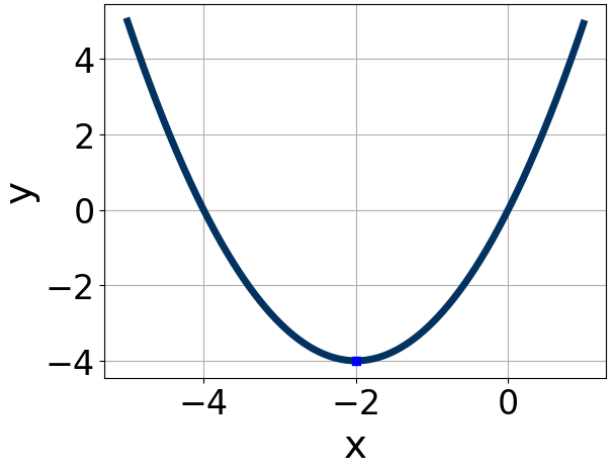
1. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-0.3, 1.7]$, $b \in [-4, -2]$, and $c \in [5, 9]$

B. $a \in [-0.3, 1.7]$, $b \in [4, 6]$, and $c \in [0, 2]$

C. $a \in [-2.7, 0.3]$, $b \in [-4, -2]$, and $c \in [-8, -5]$

D. $a \in [-0.3, 1.7]$, $b \in [-4, -2]$, and $c \in [0, 2]$

E. $a \in [-2.7, 0.3]$, $b \in [4, 6]$, and $c \in [-8, -5]$

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

$$8x^2 - 18x - 81 = 0$$

A. $x_1 \in [-7.54, -6.19]$ and $x_2 \in [1.32, 1.86]$

B. $x_1 \in [-18.23, -17.72]$ and $x_2 \in [35.81, 36.08]$

C. $x_1 \in [-3.28, -1.22]$ and $x_2 \in [4.33, 4.53]$

D. $x_1 \in [-9.36, -7]$ and $x_2 \in [0.79, 1.14]$

E. $x_1 \in [-1.69, -0.71]$ and $x_2 \in [13.35, 13.95]$

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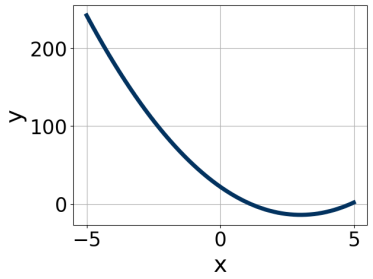
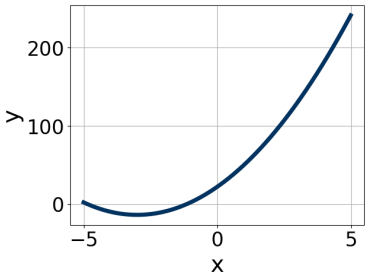
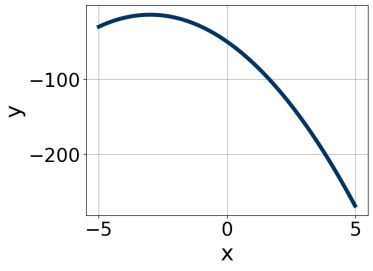
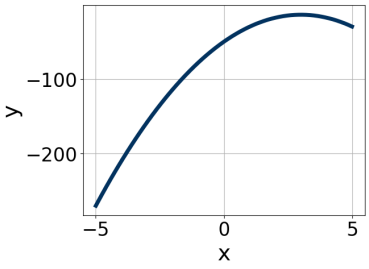
3. Graph the equation below.

$$f(x) = -(x-3)^2 - 14$$

A. 

C. 

B. 

D. 

E. None of the above.

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

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

A. $a \in [1.7, 5.9]$, $b \in [-6, -1]$, $c \in [11.1, 12.66]$, and $d \in [-1, 10]$

B. $a \in [26.2, 29.2]$, $b \in [-6, -1]$, $c \in [1.89, 2.44]$, and $d \in [-1, 10]$

C. $a \in [6.7, 9.9]$, $b \in [-6, -1]$, $c \in [5.04, 6.08]$, and $d \in [-1, 10]$

D. $a \in [-1.4, 1.2]$, $b \in [-27, -23]$, $c \in [0.8, 1.95]$, and $d \in [43, 47]$

E. None of the above.

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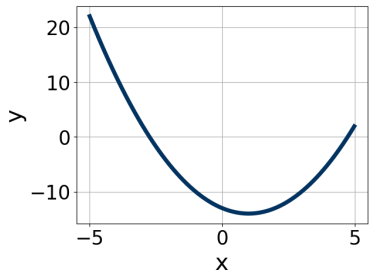
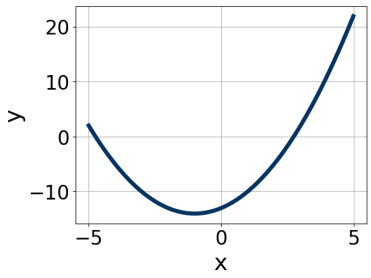
5. Graph the equation below.

$$f(x) = -(x+1)^2 - 14$$

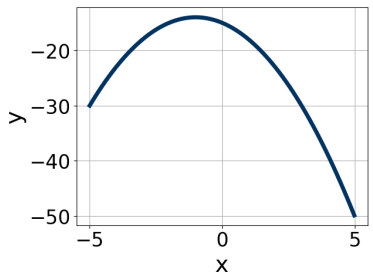
A.



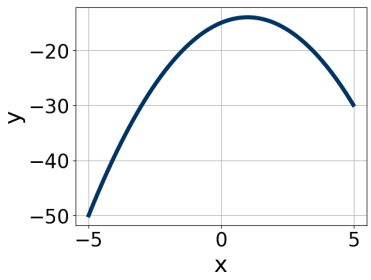
C.



B.



D.



E. None of the above.

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6. 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. $x_1 \in [-20.14, -19.64]$ and $x_2 \in [17.65, 18.51]$

B. $x_1 \in [-4, -3.25]$ and $x_2 \in [0.3, 0.57]$

C. $x_1 \in [-0.9, -0.59]$ and $x_2 \in [2.13, 2.4]$

D. $x_1 \in [-3.19, -2.43]$ and $x_2 \in [0.51, 0.7]$

E. $x_1 \in [-1.67, -1.27]$ and $x_2 \in [0.88, 1.45]$

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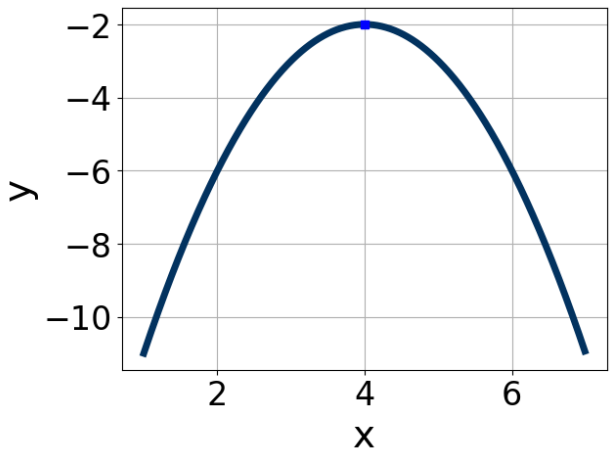
7. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-1.5, -0.7]$, $b \in [-9, -7]$, and $c \in [-18, -16]$

B. $a \in [-1.5, -0.7]$, $b \in [7, 9]$, and $c \in [-18, -16]$

C. $a \in [0.5, 1.3]$, $b \in [-9, -7]$, and $c \in [11, 17]$

D. $a \in [-1.5, -0.7]$, $b \in [-9, -7]$, and $c \in [-15, -11]$

E. $a \in [0.5, 1.3]$, $b \in [7, 9]$, and $c \in [11, 17]$

---

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

$$10x^2 + 11x + 2 = 0$$

A. $x_1 \in [-1.9, -0.3]$ and $x_2 \in [-0.7, 0.5]$

B. $x_1 \in [-0.2, 0.8]$ and $x_2 \in [-0.1, 2]$

C. $x_1 \in [-7.9, -6]$ and $x_2 \in [5.4, 6]$

D. $x_1 \in [-10.8, -8.3]$ and $x_2 \in [-3, -1.2]$

E. There are no Real solutions.

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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).

$$-15x^2 - 13x + 5 = 0$$

A. $x_1 \in [-22.89, -21.56]$ and $x_2 \in [20.33, 21.36]$

B. $x_1 \in [-4.56, -4.11]$ and $x_2 \in [16.91, 17.37]$

C. $x_1 \in [-1.02, 0.09]$ and $x_2 \in [1.04, 1.36]$

D. $x_1 \in [-2.51, -1]$ and $x_2 \in [-0.42, 0.6]$

E. There are no Real solutions.

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

$$16x^2 + 32x + 15$$

A. $a \in [3.12, 4.94]$, $b \in [-1, 8]$, $c \in [3.31, 4.02]$, and $d \in [4, 9]$

B. $a \in [-0.6, 1.78]$, $b \in [7, 18]$, $c \in [0.86, 1.06]$, and $d \in [17, 25]$

C. $a \in [1.38, 2.12]$, $b \in [-1, 8]$, $c \in [7.91, 8.45]$, and $d \in [4, 9]$

D. $a \in [7.64, 9.22]$, $b \in [-1, 8]$, $c \in [1.09, 2.26]$, and $d \in [4, 9]$

E. None of the above.
