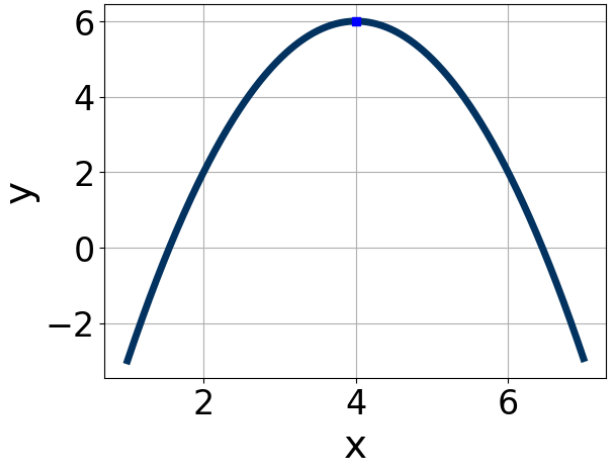
1. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-0.1, 1.4]$, $b \in [8, 9]$, and $c \in [21, 23]$

B. $a \in [-2.9, 0.7]$, $b \in [-8, -6]$, and $c \in [-24, -19]$

C. $a \in [-2.9, 0.7]$, $b \in [8, 9]$, and $c \in [-10, -8]$

D. $a \in [-0.1, 1.4]$, $b \in [-8, -6]$, and $c \in [21, 23]$

E. $a \in [-2.9, 0.7]$, $b \in [-8, -6]$, and $c \in [-10, -8]$

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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 $x_1 \leq x_2$.

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

A. $x_1 \in [0.56, 0.63]$ and $x_2 \in [2.23, 3.2]$

B. $x_1 \in [0.33, 0.41]$ and $x_2 \in [2.54, 4.31]$

C. $x_1 \in [29.96, 30.07]$ and $x_2 \in [28.73, 32.35]$

D. $x_1 \in [0.13, 0.26]$ and $x_2 \in [5.97, 6.7]$

E. $x_1 \in [1.18, 1.29]$ and $x_2 \in [0.24, 1.5]$

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

$$24x^2 + 2x - 15$$

A. $a \in [1.78, 2.82]$, $b \in [-4, -1]$, $c \in [10.5, 13.9]$, and $d \in [0, 9]$

B. $a \in [0.66, 1.4]$, $b \in [-23, -15]$, $c \in [0.8, 2]$, and $d \in [18, 21]$

C. $a \in [3.71, 4.51]$, $b \in [-4, -1]$, $c \in [5.5, 8.1]$, and $d \in [0, 9]$

D. $a \in [7.19, 8.07]$, $b \in [-4, -1]$, $c \in [2.6, 5.1]$, and $d \in [0, 9]$

E. None of the above.

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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).

$$-10x^2 + 7x + 4 = 0$$

A. $x_1 \in [-14.26, -14]$ and $x_2 \in [13.83, 15.02]$

B. $x_1 \in [-1.01, 0.64]$ and $x_2 \in [0.41, 1.63]$

C. $x_1 \in [-11.14, -10.21]$ and $x_2 \in [2.94, 4.12]$

D. $x_1 \in [-1.16, -0.73]$ and $x_2 \in [-0.44, 0.93]$

E. There are no Real solutions.

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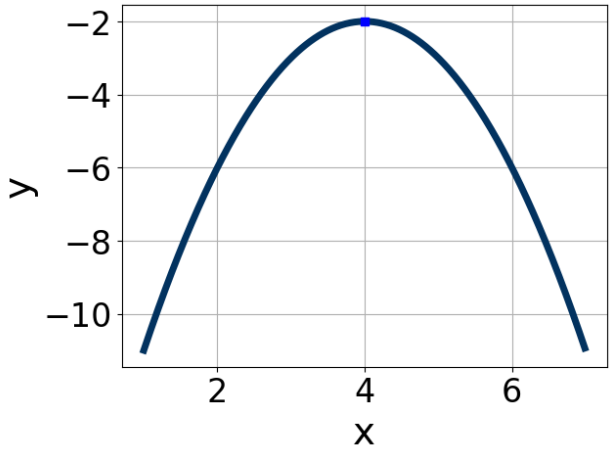
5. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-1.2, -0.4]$, $b \in [-11, -6]$, and $c \in [-18, -16]$

B. $a \in [-1.2, -0.4]$, $b \in [4, 11]$, and $c \in [-18, -16]$

C. $a \in [-1.2, -0.4]$, $b \in [-11, -6]$, and $c \in [-17, -10]$

D. $a \in [0.4, 3.1]$, $b \in [-11, -6]$, and $c \in [13, 18]$

E. $a \in [0.4, 3.1]$, $b \in [4, 11]$, and $c \in [13, 18]$

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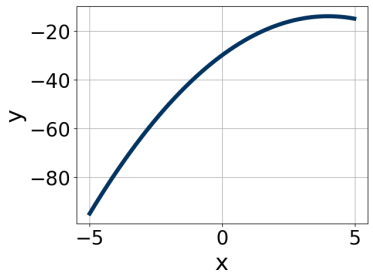
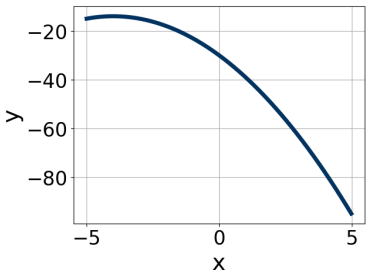
6. Graph the equation below.

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

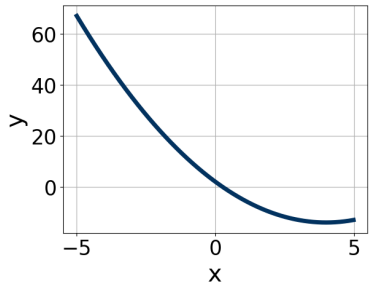
A.



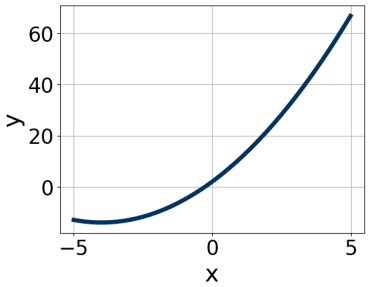
C.



B.



D.



E. None of the above.

7. 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. $a \in [0.13, 1.53]$, $b \in [29, 31]$, $c \in [-2.5, 2.6]$, and $d \in [29, 32]$

B. $a \in [11.83, 12.98]$, $b \in [3, 9]$, $c \in [1.7, 4.4]$, and $d \in [2, 8]$

C. $a \in [1.64, 3]$, $b \in [3, 9]$, $c \in [17, 18.7]$, and $d \in [2, 8]$

D. $a \in [4.12, 6.04]$, $b \in [3, 9]$, $c \in [4.7, 6.6]$, and $d \in [2, 8]$

E. None of the above.

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8. 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. $x_1 \in [2.17, 2.28]$ and $x_2 \in [1.72, 2.57]$

B. $x_1 \in [0.87, 0.9]$ and $x_2 \in [5.77, 6.44]$

C. $x_1 \in [0.13, 0.51]$ and $x_2 \in [12.77, 13.61]$

D. $x_1 \in [11.65, 12.12]$ and $x_2 \in [44.77, 45.15]$

E. $x_1 \in [1.19, 1.35]$ and $x_2 \in [4.06, 4.61]$

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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).

$$20x^2 + 7x - 2 = 0$$

A. $x_1 \in [-10.9, -10.2]$ and $x_2 \in [3.67, 3.98]$

B. $x_1 \in [-15.2, -14.1]$ and $x_2 \in [14.18, 14.73]$

C. $x_1 \in [-0.3, 0.2]$ and $x_2 \in [0.45, 0.84]$

D. $x_1 \in [-2, -0.3]$ and $x_2 \in [-0.21, 0.24]$

E. There are no Real solutions.

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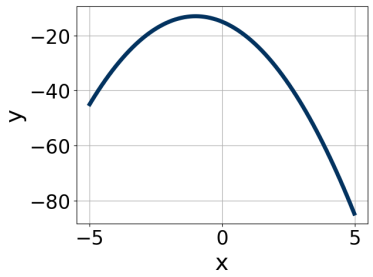
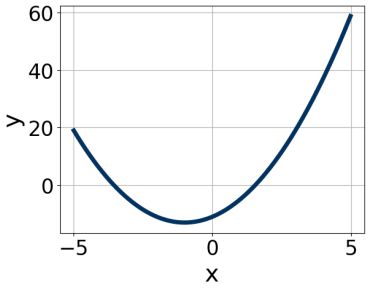
10. Graph the equation below.

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

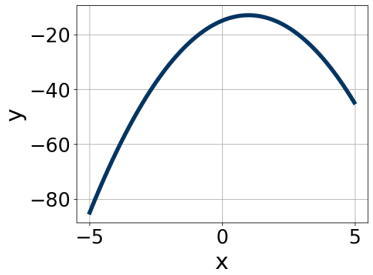
A.



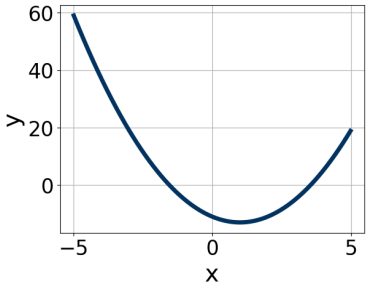
C.



B.



D.



E. None of the above.
