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

$$15x^2 + 14x + 2 = 0$$

A. $x_1 \in [-2.5, -0.6]$ and $x_2 \in [-1.6, 0.4]$

B. $x_1 \in [-9.5, -9]$ and $x_2 \in [7.9, 8.4]$

C. $x_1 \in [-0.6, 1.5]$ and $x_2 \in [0.2, 1.7]$

D. $x_1 \in [-13.1, -9.2]$ and $x_2 \in [-3.9, -2.5]$

E. There are no Real solutions.

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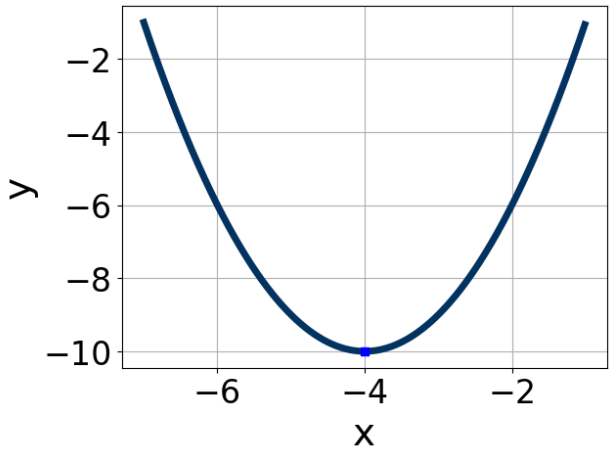
2. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-2, 0]$, $b \in [3, 11]$, and $c \in [-28, -23]$

B. $a \in [0, 2]$, $b \in [3, 11]$, and $c \in [4, 7]$

C. $a \in [0, 2]$, $b \in [-9, -5]$, and $c \in [25, 28]$

D. $a \in [-2, 0]$, $b \in [-9, -5]$, and $c \in [-28, -23]$

E. $a \in [0, 2]$, $b \in [-9, -5]$, and $c \in [4, 7]$

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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 $x_1 \leq x_2$.

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

A. $x_1 \in [-1.5, 4.5]$ and $x_2 \in [3.16, 4.52]$

B. $x_1 \in [-46, -44]$ and $x_2 \in [11.84, 12.08]$

C. $x_1 \in [-5.5, -2.5]$ and $x_2 \in [0.97, 1.48]$

D. $x_1 \in [-12, -8]$ and $x_2 \in [0.5, 0.69]$

E. $x_1 \in [-14.5, -10.5]$ and $x_2 \in [0.25, 0.55]$

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

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

A. $a \in [11.54, 12.85]$, $b \in [-8, 1]$, $c \in [1.54, 3.75]$, and $d \in [-8, 1]$

B. $a \in [1.91, 2.42]$, $b \in [-8, 1]$, $c \in [17.99, 18.19]$, and $d \in [-8, 1]$

C. $a \in [5.18, 6.28]$, $b \in [-8, 1]$, $c \in [4.63, 6.26]$, and $d \in [-8, 1]$

D. $a \in [-0.08, 1.61]$, $b \in [-31, -25]$, $c \in [0.66, 1.26]$, and $d \in [-32, -26]$

E. None of the above.

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

$$12x^2 + 13x - 7 = 0$$

A. $x_1 \in [-23.17, -23]$ and $x_2 \in [20.6, 23.4]$

B. $x_1 \in [-0.45, 0.37]$ and $x_2 \in [0.8, 2.2]$

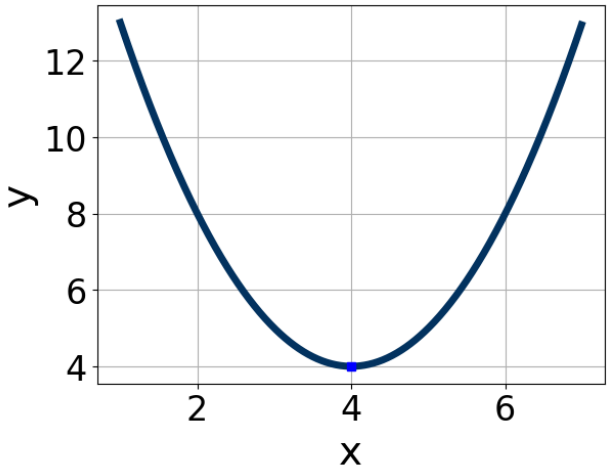
C. $x_1 \in [-2.27, -0.78]$ and $x_2 \in [-0.1, 0.6]$

D. $x_1 \in [-18.34, -17.61]$ and $x_2 \in [3.7, 5.5]$

E. There are no Real solutions.

---

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. $a \in [-5, 0]$, $b \in [-10, -5]$, and $c \in [-16, -10]$

B. $a \in [0, 3]$, $b \in [6, 11]$, and $c \in [20, 25]$

C. $a \in [0, 3]$, $b \in [6, 11]$, and $c \in [8, 14]$

D. $a \in [-5, 0]$, $b \in [6, 11]$, and $c \in [-16, -10]$

E. $a \in [0, 3]$, $b \in [-10, -5]$, and $c \in [20, 25]$

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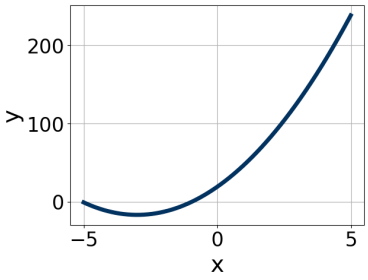
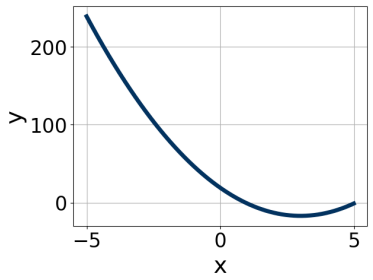
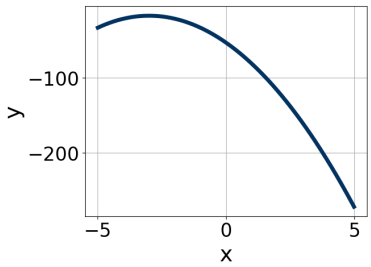
7. Graph the equation below.

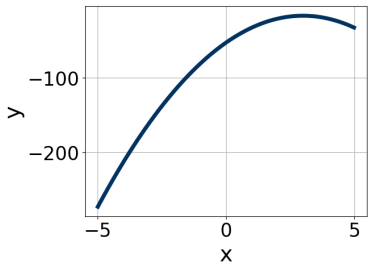
$$f(x) = -(x - 3)^2 - 17$$

A.



B. 

C. 

D. 

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 $x_1 \leq x_2$.

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

A. $x_1 \in [-7.82, -3.87]$ and $x_2 \in [-0.32, -0.22]$

B. $x_1 \in [-30.29, -29.97]$ and $x_2 \in [-30.01, -29.83]$

C. $x_1 \in [-3.99, -2.42]$ and $x_2 \in [-0.49, -0.39]$

D. $x_1 \in [-1.95, -0.24]$ and $x_2 \in [-1.32, -1.01]$

E. $x_1 \in [-2.86, -1.53]$ and $x_2 \in [-0.67, -0.54]$

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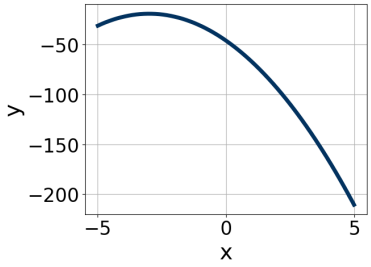
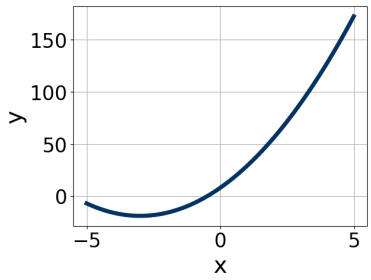
9. Graph the equation below.

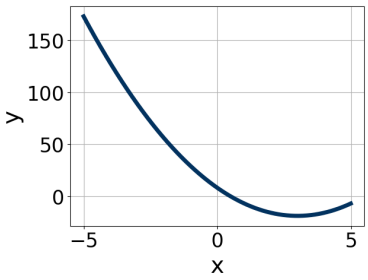
$$f(x) = -(x-3)^2 - 19$$

A. 

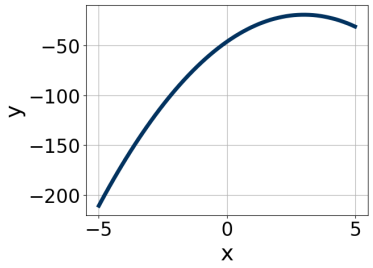
B.



D.



C.



E. None of the above.

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

$$54x^2 + 33x - 10$$

A. $a \in [1.2, 4.7]$, $b \in [-8, 6]$, $c \in [17.76, 19.31]$, and $d \in [3, 7]$

B. $a \in [-1.6, 1.9]$, $b \in [-15, -10]$, $c \in [0.73, 1.12]$, and $d \in [42, 49]$

C. $a \in [7.7, 11.3]$, $b \in [-8, 6]$, $c \in [5.22, 6.9]$, and $d \in [3, 7]$

D. $a \in [22.5, 27.2]$, $b \in [-8, 6]$, $c \in [1.84, 2.68]$, and $d \in [3, 7]$

E. None of the above.
