1. 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. $a \in [0.4, 3.8]$, $b \in [11, 14]$, $c \in [-0.86, 1.37]$, and $d \in [44, 47]$

B. $a \in [6.4, 12.8]$, $b \in [0, 3]$, $c \in [5.93, 7.07]$, and $d \in [3, 6]$

C. $a \in [3.4, 5.1]$, $b \in [0, 3]$, $c \in [10.7, 12.92]$, and $d \in [3, 6]$

D. $a \in [24.8, 27.6]$, $b \in [0, 3]$, $c \in [1.41, 2.32]$, and $d \in [3, 6]$

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).

$$17x^2 + 12x - 9 = 0$$

A. $x_1 \in [-28.28, -27.48]$ and $x_2 \in [26.99, 27.36]$

B. $x_1 \in [-1.54, -0.96]$ and $x_2 \in [-0.63, 1.02]$

C. $x_1 \in [-1.03, -0.43]$ and $x_2 \in [0.59, 1.5]$

D. $x_1 \in [-19.92, -19.53]$ and $x_2 \in [7.43, 8.2]$

E. There are no Real solutions.

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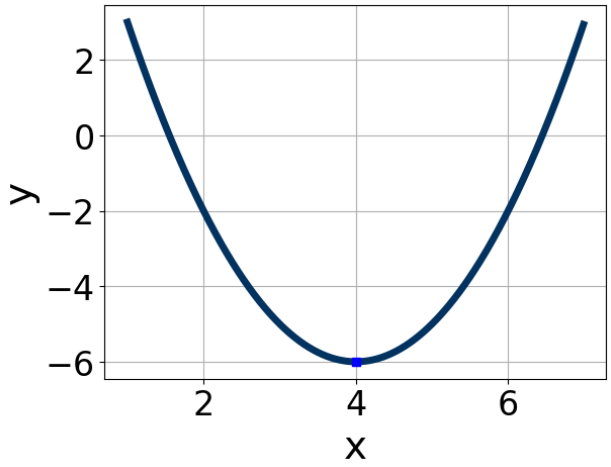
3. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-0.3, 1.9]$, $b \in [8, 9]$, and $c \in [8, 13]$

B. $a \in [-1.6, 0.3]$, $b \in [-10, -6]$, and $c \in [-22, -21]$

C. $a \in [-0.3, 1.9]$, $b \in [-10, -6]$, and $c \in [8, 13]$

D. $a \in [-0.3, 1.9]$, $b \in [8, 9]$, and $c \in [20, 25]$

E. $a \in [-1.6, 0.3]$, $b \in [8, 9]$, and $c \in [-22, -21]$

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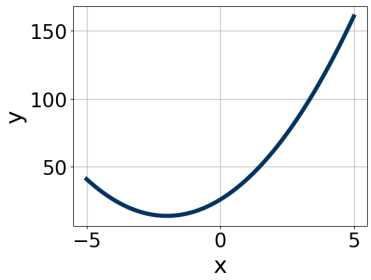
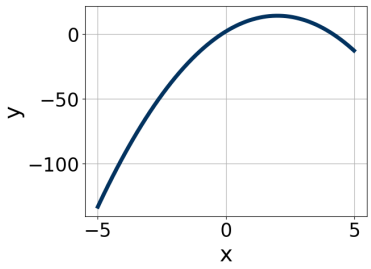
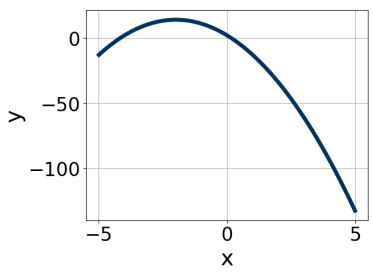
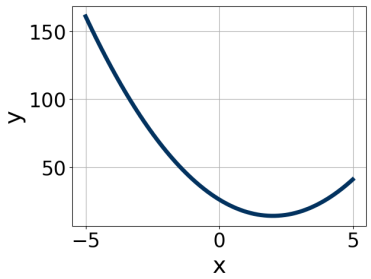
4. Graph the equation below.

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

A.


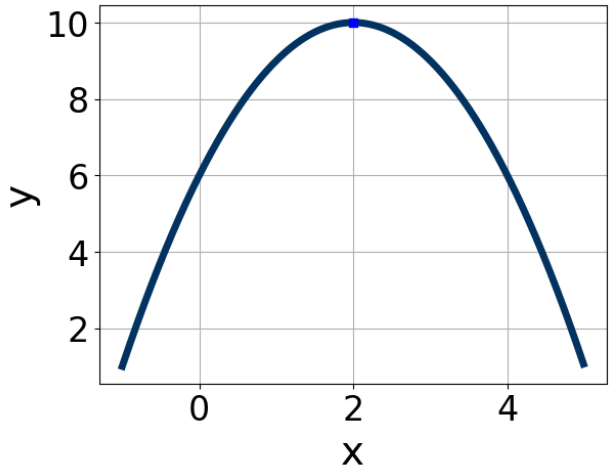
C.


B.


D.


E. None of the above.

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. $a \in [0, 1.8]$, $b \in [1, 7]$, and $c \in [13, 15]$

B. $a \in [-1.1, 0.7]$, $b \in [-5, 2]$, and $c \in [-15, -12]$

C. $a \in [-1.1, 0.7]$, $b \in [1, 7]$, and $c \in [6, 7]$

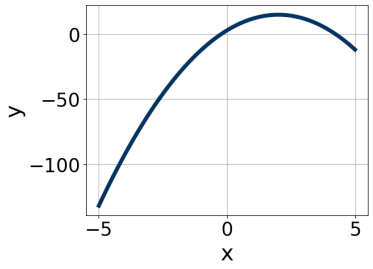
D. $a \in [0, 1.8]$, $b \in [-5, 2]$, and $c \in [13, 15]$

E. $a \in [-1.1, 0.7]$, $b \in [-5, 2]$, and $c \in [6, 7]$

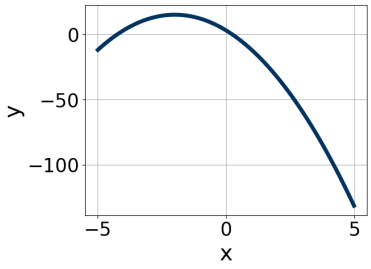
6. Graph the equation below.

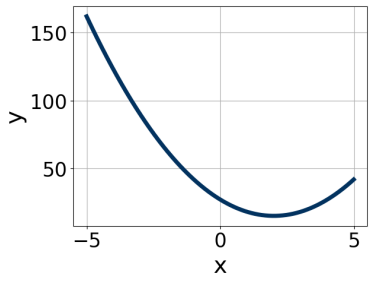
$$f(x) = -(x - 2)^2 + 15$$

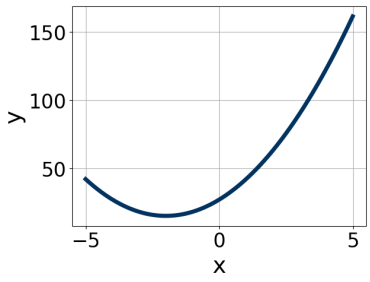
A.



B.



C. 

D. 

E. None of the above.

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7. 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. $a \in [1.76, 2.51]$, $b \in [-10, -2]$, $c \in [6.8, 9.17]$, and $d \in [-3, 0]$

B. $a \in [6.86, 8.53]$, $b \in [-10, -2]$, $c \in [1.41, 2.13]$, and $d \in [-3, 0]$

C. $a \in [2.39, 4.25]$, $b \in [-10, -2]$, $c \in [2.38, 4.86]$, and $d \in [-3, 0]$

D. $a \in [0.55, 1.39]$, $b \in [-20, -16]$, $c \in [0.19, 1.2]$, and $d \in [-12, -8]$

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 $x_1 \leq x_2$.

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

A. $x_1 \in [-4.6, -2.77]$ and $x_2 \in [0.47, 0.91]$

B. $x_1 \in [-10.17, -8.65]$ and $x_2 \in [0.21, 0.51]$

C. $x_1 \in [-0.91, -0.74]$ and $x_2 \in [3.41, 3.82]$

D. $x_1 \in [-2.93, -1.14]$ and $x_2 \in [0.7, 1.57]$

E. $x_1 \in [-46.76, -44.28]$ and $x_2 \in [23.04, 24.03]$

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

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

A. $x_1 \in [-29, -26.9]$ and $x_2 \in [27.94, 28.59]$

B. $x_1 \in [-1.4, 1]$ and $x_2 \in [1.06, 1.77]$

C. $x_1 \in [-7.6, -6.1]$ and $x_2 \in [20.45, 22.18]$

D. $x_1 \in [-2.7, -0.9]$ and $x_2 \in [0.38, 0.63]$

E. There are no Real solutions.

10. 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. $x_1 \in [-2.98, -1.29]$ and $x_2 \in [-0.69, -0.42]$

B. $x_1 \in [-2.13, -0.94]$ and $x_2 \in [-1.28, -0.97]$

C. $x_1 \in [-30.73, -28.36]$ and $x_2 \in [-30.12, -29.88]$

D. $x_1 \in [-7.75, -4.14]$ and $x_2 \in [-0.27, -0.11]$

E. $x_1 \in [-4.05, -3.34]$ and $x_2 \in [-0.45, -0.39]$