1. 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. $a \in [11.12, 13.34], \quad b \in [-6, -2], \quad c \in [1.49, 3.87], \text{ and } \quad d \in [1, 8]$

B. $a \in [3.51, 4.33], \quad b \in [-6, -2], \quad c \in [5.75, 7.13], \text{ and } \quad d \in [1, 8]$

C. $a \in [0.56, 1.64], \quad b \in [-21, -15], \quad c \in [-0.86, 1.19], \text{ and } \quad d \in [16, 25]$

D. $a \in [1.69, 2.52], \quad b \in [-6, -2], \quad c \in [10.8, 13.72], \text{ and } \quad d \in [1, 8]$

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).

$$11x^2 - 13x + 3 = 0$$

A. $x_1 \in [1.7, 3.5]$ and $x_2 \in [8.6, 10.2]$

B. $x_1 \in [-0.1, 1.7]$ and $x_2 \in [-0.1, 2.3]$

C. $x_1 \in [-1.5, -0.3]$ and $x_2 \in [-1.3, 0]$

D. $x_1 \in [-6.7, -5.1]$ and $x_2 \in [5.9, 7.8]$

E. There are no Real solutions.

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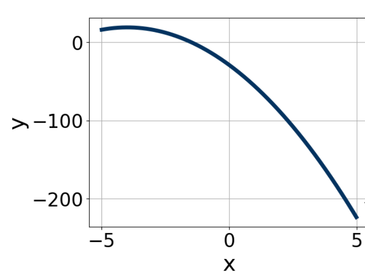
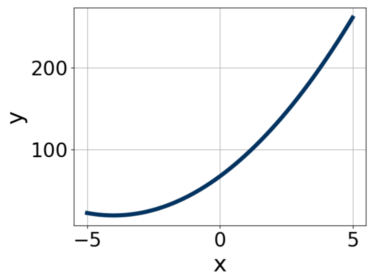
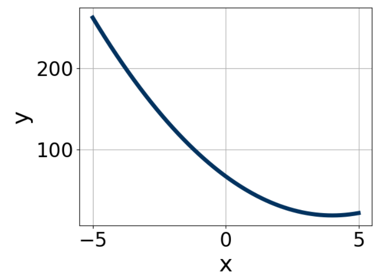
3. Graph the equation below.

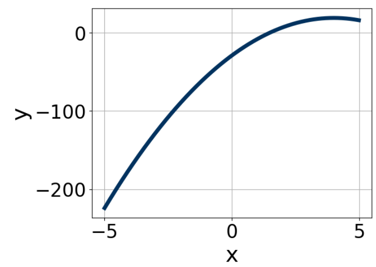
$$f(x) = (x+4)^2 + 19$$




A.

B. 


C. 


D. 


E. None of the above.

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4. 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. $x_1 \in [-2.35, -2.03]$ and $x_2 \in [1.14, 1.2]$

B. $x_1 \in [-8.12, -6.44]$ and $x_2 \in [0.33, 0.9]$

C. $x_1 \in [-2.02, -0.16]$ and $x_2 \in [2.13, 2.53]$

D. $x_1 \in [-11.03, -7.38]$ and $x_2 \in [-0.12, 0.33]$

E. $x_1 \in [-45.05, -43.54]$ and $x_2 \in [23.79, 24.38]$

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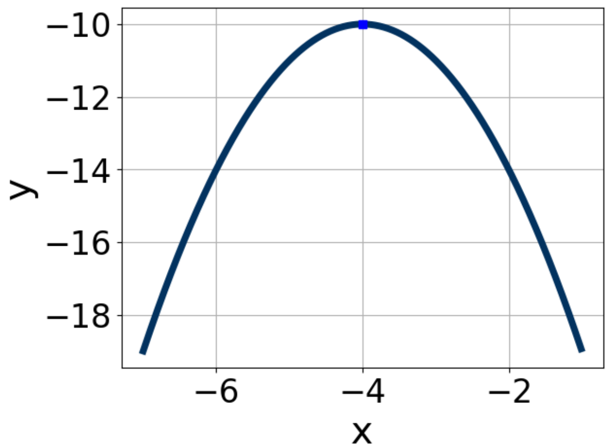
5. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and $c$ belong to.




A. $a \in [-1.8, -0.5], \quad b \in [3, 11], \text{ and } \quad c \in [-29, -23]$

B. $a \in [-1.8, -0.5], \quad b \in [3, 11], \text{ and } \quad c \in [-7, -2]$

C. $a \in [0.4, 2.8], \quad b \in [-10, -5], \text{ and } \quad c \in [3, 7]$

D. $a \in [-1.8, -0.5], \quad b \in [-10, -5], \text{ and } \quad c \in [-29, -23]$

E. $a \in [0.4, 2.8], \quad b \in [3, 11], \text{ and } \quad c \in [3, 7]$