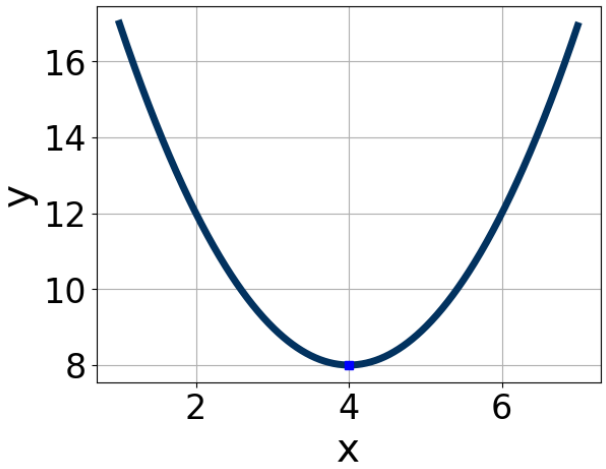
1. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-3, -0.1]$, $b \in [-9, -6]$, and $c \in [-9, -6]$

B. $a \in [0.9, 2.1]$, $b \in [7, 9]$, and $c \in [23, 28]$

C. $a \in [0.9, 2.1]$, $b \in [7, 9]$, and $c \in [7, 10]$

D. $a \in [0.9, 2.1]$, $b \in [-9, -6]$, and $c \in [23, 28]$

E. $a \in [-3, -0.1]$, $b \in [7, 9]$, and $c \in [-9, -6]$

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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 $x_1 \leq x_2$.

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

A. $x_1 \in [-3.6, -1.9]$ and $x_2 \in [1.03, 2.04]$

B. $x_1 \in [-8.3, -4.5]$ and $x_2 \in [0.37, 0.92]$

C. $x_1 \in [-10.1, -8.7]$ and $x_2 \in [-0.31, 0.36]$

D. $x_1 \in [-1.8, 0.7]$ and $x_2 \in [2.15, 3.01]$

E. $x_1 \in [-45.8, -43.1]$ and $x_2 \in [23.72, 24.11]$

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

$$-10x^2 - 14x - 2 = 0$$

A. $x_1 \in [1, 2]$ and $x_2 \in [12.18, 12.58]$

B. $x_1 \in [0, 1]$ and $x_2 \in [0.65, 1.25]$

C. $x_1 \in [-3, 0]$ and $x_2 \in [-0.63, 0.57]$

D. $x_1 \in [-12, -10]$ and $x_2 \in [9.75, 10.41]$

E. There are no Real solutions.

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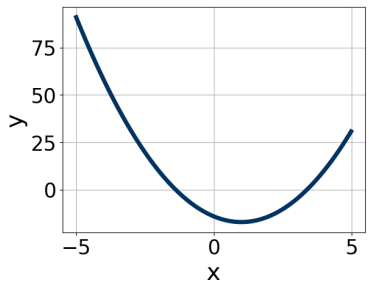
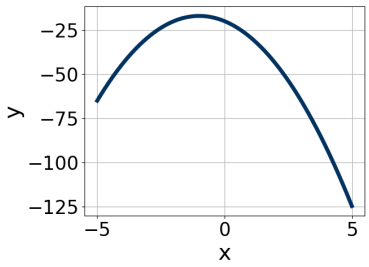
4. Graph the equation below.

$$f(x) = (x + 1)^2 - 17$$

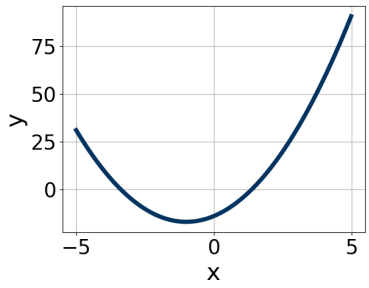
A.



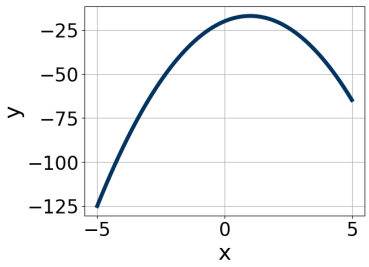
C.



B.



D.



E. None of the above.

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

$$24x^2 - 38x + 15$$

A. $a \in [2.6, 5.8]$, $b \in [-12, -2]$, $c \in [7.7, 8.1]$, and $d \in [-6, -1]$

B. $a \in [-1.2, 1.4]$, $b \in [-21, -18]$, $c \in [0.2, 1.3]$, and $d \in [-22, -16]$

C. $a \in [4, 6.7]$, $b \in [-12, -2]$, $c \in [2.8, 4.3]$, and $d \in [-6, -1]$

D. $a \in [17.2, 20.4]$, $b \in [-12, -2]$, $c \in [0.2, 1.3]$, and $d \in [-6, -1]$

E. None of the above.
