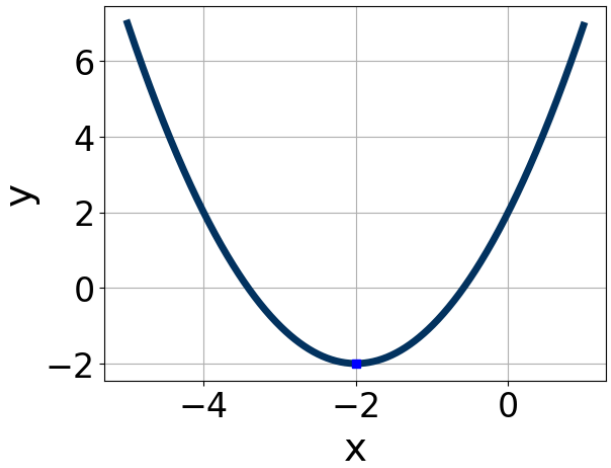
1. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-1.3, -0.9]$, $b \in [3, 9]$, and $c \in [-6, -4]$

B. $a \in [0.9, 1.6]$, $b \in [3, 9]$, and $c \in [0, 3]$

C. $a \in [-1.3, -0.9]$, $b \in [-6, -3]$, and $c \in [-6, -4]$

D. $a \in [0.9, 1.6]$, $b \in [-6, -3]$, and $c \in [5, 9]$

E. $a \in [0.9, 1.6]$, $b \in [-6, -3]$, and $c \in [0, 3]$

---

2. 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. $a \in [17.94, 18.79]$, $b \in [-7, 2]$, $c \in [-0.3, 2.2]$, and $d \in [-5, -1]$

B. $a \in [4.74, 7.72]$, $b \in [-7, 2]$, $c \in [1.4, 4.8]$, and $d \in [-5, -1]$

C. $a \in [1.79, 4.46]$, $b \in [-7, 2]$, $c \in [4.9, 8.9]$, and $d \in [-5, -1]$

D. $a \in [0.82, 1.2]$, $b \in [-27, -17]$, $c \in [-0.3, 2.2]$, and $d \in [-19, -14]$

E. None of the above.

---

3. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 - 15x - 54 = 0$$

A. $x_1 \in [-1.45, -0.63]$ and $x_2 \in [1.68, 1.81]$

B. $x_1 \in [-6.62, -5.24]$ and $x_2 \in [0.33, 0.42]$

C. $x_1 \in [-4.68, -3.42]$ and $x_2 \in [0.6, 0.86]$

D. $x_1 \in [-31.56, -29.49]$ and $x_2 \in [44.72, 45.21]$

E. $x_1 \in [-0.67, 0.57]$ and $x_2 \in [3.28, 3.94]$

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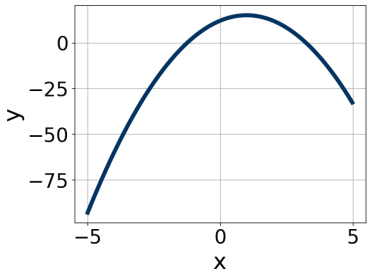
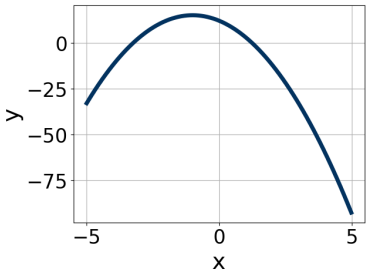
4. Graph the equation below.

$$f(x) = -(x-1)^2 + 15$$

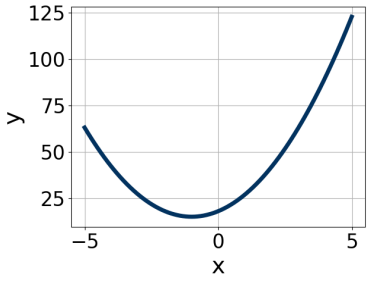
A.



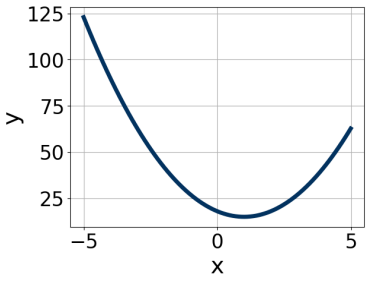
C.



B.



D.



E. None of the above.

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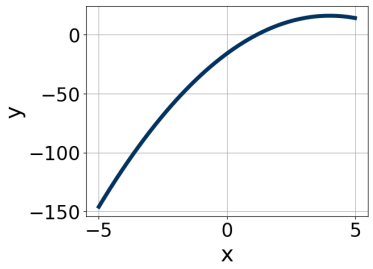
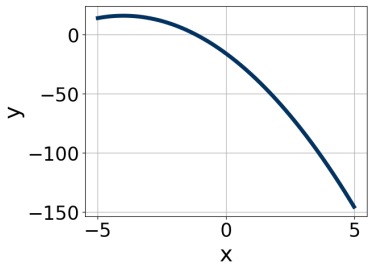
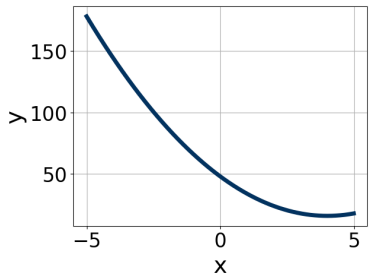
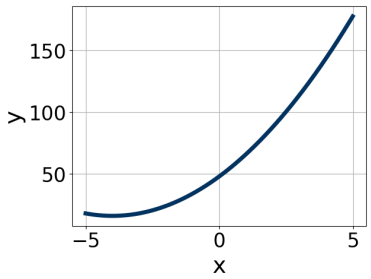
5. Graph the equation below.

$$f(x) = -(x-4)^2 + 16$$

A.


C.


B.


D.


E. None of the above.

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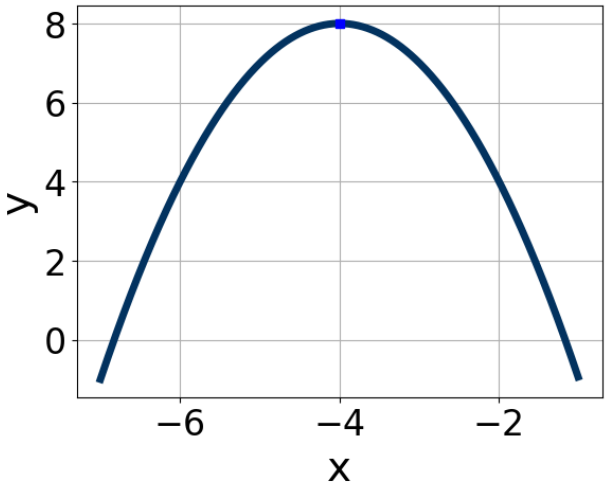
6. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [0.5, 2]$, $b \in [-12, -5]$, and $c \in [23, 25]$

B. $a \in [0.5, 2]$, $b \in [6, 11]$, and $c \in [23, 25]$

C. $a \in [-2.1, -0.7]$, $b \in [-12, -5]$, and $c \in [-9, -7]$

D. $a \in [-2.1, -0.7]$, $b \in [6, 11]$, and $c \in [-25, -22]$

E. $a \in [-2.1, -0.7]$, $b \in [6, 11]$, and $c \in [-9, -7]$

---

7. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 + 50x + 24 = 0$$

A. $x_1 \in [-30.1, -29.93]$ and $x_2 \in [-20.14, -19.97]$

B. $x_1 \in [-6.07, -5.69]$ and $x_2 \in [-0.17, -0.13]$

C. $x_1 \in [-3.9, -3.37]$ and $x_2 \in [-0.36, -0.2]$

D. $x_1 \in [-1.77, -1.5]$ and $x_2 \in [-0.76, -0.52]$

E. $x_1 \in [-1.3, -1.1]$ and $x_2 \in [-1.07, -0.64]$

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8. 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. $a \in [12.7, 18.5]$, $b \in [-8, -3]$, $c \in [-1.8, 1.3]$, and $d \in [-1, 8]$

B. $a \in [3.3, 8]$, $b \in [-8, -3]$, $c \in [2, 4.4]$, and $d \in [-1, 8]$

C. $a \in [-2.3, 1.5]$, $b \in [-20, -13]$, $c \in [-1.8, 1.3]$, and $d \in [16, 21]$

D. $a \in [1.4, 5.6]$, $b \in [-8, -3]$, $c \in [6, 10.3]$, and $d \in [-1, 8]$

E. None of the above.

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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).

$$-10x^2 + 13x + 7 = 0$$

A. $x_1 \in [-0.41, 0.59]$ and $x_2 \in [1.62, 1.72]$

B. $x_1 \in [-22.54, -18.54]$ and $x_2 \in [21.66, 22.01]$

C. $x_1 \in [-3.71, -0.71]$ and $x_2 \in [-0.19, 0.66]$

D. $x_1 \in [-19.09, -15.09]$ and $x_2 \in [3.63, 4.5]$

E. There are no Real solutions.

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

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

A. $x_1 \in [-19.9, -16.8]$ and $x_2 \in [15.32, 16.76]$

B. $x_1 \in [-16.2, -13.6]$ and $x_2 \in [1.45, 2.59]$

C. $x_1 \in [-1.8, -1]$ and $x_2 \in [-0.53, 0.25]$

D. $x_1 \in [-0.9, 2.9]$ and $x_2 \in [0.54, 1.56]$

E. There are no Real solutions.
