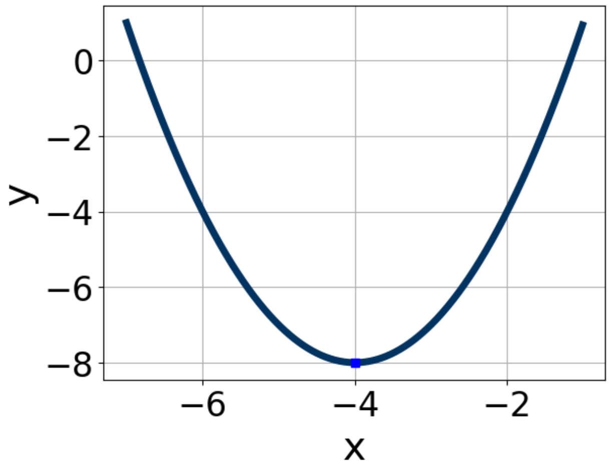
1. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [1, 2], \quad b \in [8, 10], \text{ and } \quad c \in [5, 9]$

B. $a \in [1, 2], \quad b \in [-8, -7], \text{ and } \quad c \in [23, 28]$

C. $a \in [1, 2], \quad b \in [-8, -7], \text{ and } \quad c \in [5, 9]$

D. $a \in [-4, 0], \quad b \in [-8, -7], \text{ and } \quad c \in [-24, -21]$

E. $a \in [-4, 0], \quad b \in [8, 10], \text{ and } \quad c \in [-24, -21]$

---

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

$$-15x^2 + 7x + 3 = 0$$

A. $x_1 \in [-2.6, -0.5]$ and $x_2 \in [-0.72, 0.57]$

B. $x_1 \in [-0.6, 0.6]$ and $x_2 \in [0.57, 1.57]$

C. $x_1 \in [-11.3, -9.3]$ and $x_2 \in [3.88, 4.45]$

D. $x_1 \in [-16, -14.7]$ and $x_2 \in [15.11, 15.87]$

E. There are no Real solutions.

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3. 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. $a \in [3.05, 4.89]$, $b \in [-13, -3]$, $c \in [3.94, 4.04]$, and $d \in [-6, 6]$

B. $a \in [0.13, 1.12]$, $b \in [-23, -14]$, $c \in [0.21, 1.02]$, and $d \in [-15, -9]$

C. $a \in [7.09, 8.31]$, $b \in [-13, -3]$, $c \in [1.11, 2.12]$, and $d \in [-6, 6]$

D. $a \in [1.86, 2.14]$, $b \in [-13, -3]$, $c \in [7.75, 8.12]$, and $d \in [-6, 6]$

E. None of the above.

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

$$20x^2 + 15x - 8 = 0$$

A. $x_1 \in [-0.5, 1.1]$ and $x_2 \in [0.86, 2.17]$

B. $x_1 \in [-31.3, -29.6]$ and $x_2 \in [28.54, 30.04]$

C. $x_1 \in [-1.8, -0.4]$ and $x_2 \in [-0.03, 0.94]$

D. $x_1 \in [-23.4, -20.8]$ and $x_2 \in [6.73, 7.26]$

E. There are no Real solutions.

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

$$15x^2 - 47x + 36 = 0$$

A. $x_1 \in [0.21, 0.55]$ and $x_2 \in [4.82, 5.52]$

B. $x_1 \in [19.99, 20.25]$ and $x_2 \in [26.53, 27.05]$

C. $x_1 \in [1.2, 1.5]$ and $x_2 \in [1.53, 2.31]$

D. $x_1 \in [0.5, 0.75]$ and $x_2 \in [3.81, 4.88]$

E. $x_1 \in [0.63, 0.97]$ and $x_2 \in [2.04, 2.96]$

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

$$20x^2 + 69x + 54 = 0$$

A. $x_1 \in [-45.07, -44.94]$ and $x_2 \in [-24.02, -23.99]$

B. $x_1 \in [-2.34, -1.96]$ and $x_2 \in [-1.28, -1.13]$

C. $x_1 \in [-9.33, -8.66]$ and $x_2 \in [-0.37, -0.25]$

D. $x_1 \in [-7.1, -6.21]$ and $x_2 \in [-0.45, -0.33]$

E. $x_1 \in [-2.52, -2.38]$ and $x_2 \in [-1.18, -1.12]$

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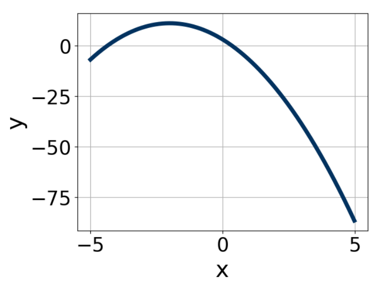
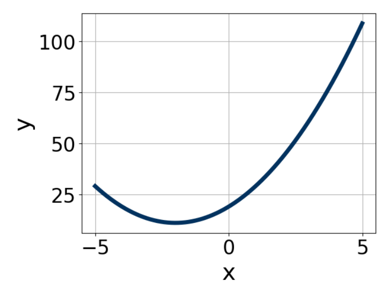
7. Graph the equation below.

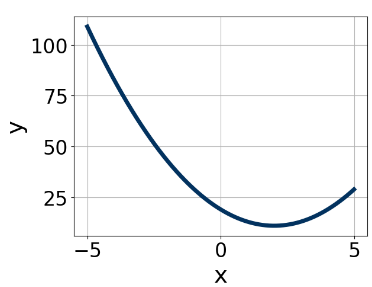
$$f(x) = -(x-2)^2 + 11$$



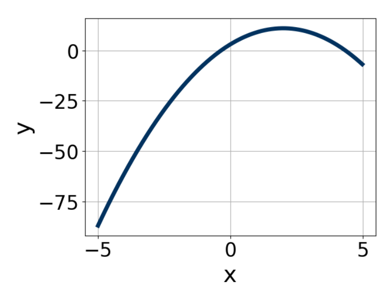
A.



C.



B.



D.

E. None of the above.

8. 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. $a \in [3.3, 8], \quad b \in [-7, 6], \quad c \in [8.8, 10], \text{ and } \quad d \in [-6, 4]$

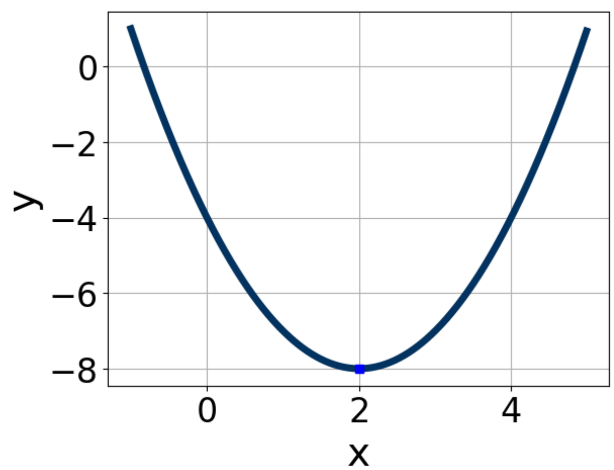
B. $a \in [16.4, 20.8], \quad b \in [-7, 6], \quad c \in [1.5, 3.9], \text{ and } \quad d \in [-6, 4]$

C. $a \in [1.3, 4.3], \quad b \in [-7, 6], \quad c \in [24.5, 27.9], \text{ and } \quad d \in [-6, 4]$

D. $a \in [0.3, 1.3], \quad b \in [-47, -44], \quad c \in [-1.7, 2.3], \text{ and } \quad d \in [8, 17]$

E. None of the above.

9. 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. $a \in [1, 2], \quad b \in [4, 5], \text{ and } \quad c \in [-4, -1]$

B. $a \in [1, 2], \quad b \in [4, 5], \text{ and } \quad c \in [9, 14]$

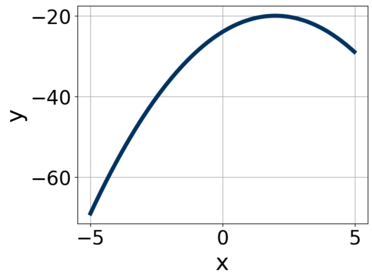
C. $a \in [1, 2], \quad b \in [-5, -1], \text{ and } \quad c \in [-4, -1]$

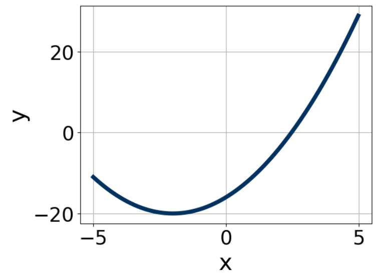
D. $a \in [-2, 0], \quad b \in [4, 5], \text{ and } \quad c \in [-12, -9]$

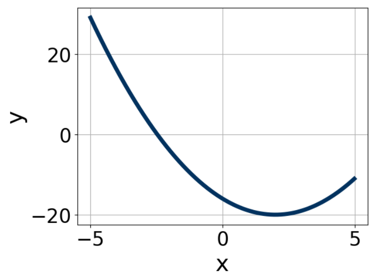
E. $a \in [-2, 0], \quad b \in [-5, -1], \text{ and } \quad c \in [-12, -9]$

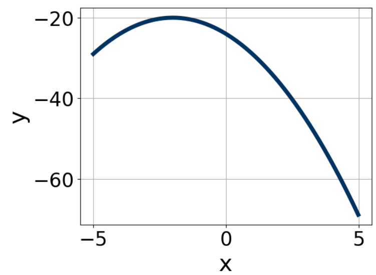
10. Graph the equation below.

$$f(x) = -(x+2)^2 - 20$$

A. 

C. 

B. 

D. 

E. None of the above.