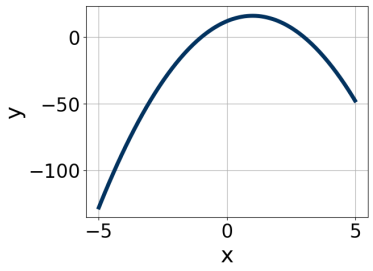
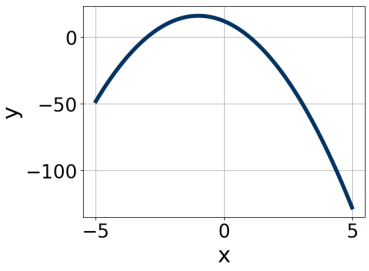
1. Graph the equation below.

$$f(x) = -(x+1)^2 + 16$$

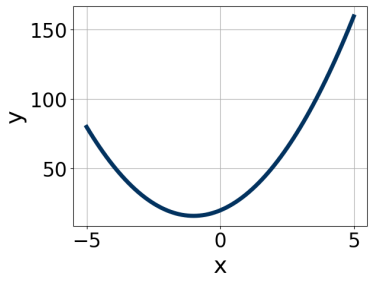
A.



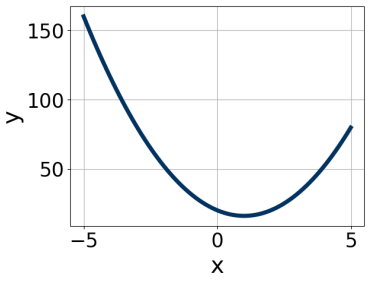
C.



B.



D.



E. None of the above.

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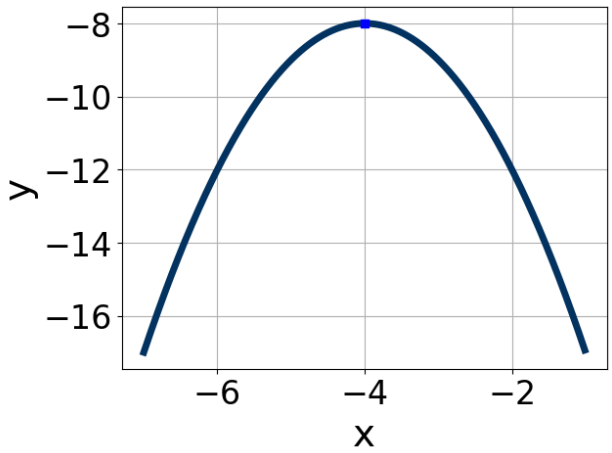
2. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [0, 5]$, $b \in [-9, -7]$, and $c \in [8, 12]$

B. $a \in [-6, 0]$, $b \in [8, 10]$, and $c \in [-10, -7]$

C. $a \in [-6, 0]$, $b \in [-9, -7]$, and $c \in [-24, -22]$

D. $a \in [0, 5]$, $b \in [8, 10]$, and $c \in [8, 12]$

E. $a \in [-6, 0]$, $b \in [8, 10]$, and $c \in [-24, -22]$

---

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

$$16x^2 + 8x - 2 = 0$$

A. $x_1 \in [-0.89, -0.6]$ and $x_2 \in [-0.37, 0.21]$

B. $x_1 \in [-12.13, -10.02]$ and $x_2 \in [2.26, 3.39]$

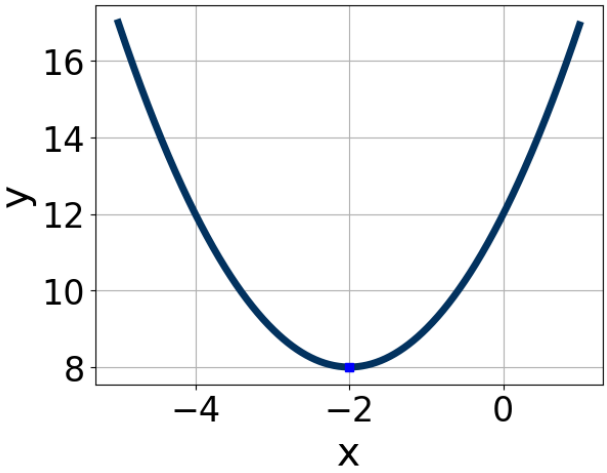
C. $x_1 \in [-14.59, -14.02]$ and $x_2 \in [13.27, 14.07]$

D. $x_1 \in [-0.44, 0.68]$ and $x_2 \in [0.6, 0.86]$

E. There are no Real solutions.

---

4. 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. $a \in [-0.1, 3]$, $b \in [3, 8]$, and $c \in [11, 14]$

B. $a \in [-1.7, -0.5]$, $b \in [-9, -3]$, and $c \in [4, 9]$

C. $a \in [-0.1, 3]$, $b \in [-9, -3]$, and $c \in [-5, -1]$

D. $a \in [-1.7, -0.5]$, $b \in [3, 8]$, and $c \in [4, 9]$

E. $a \in [-0.1, 3]$, $b \in [-9, -3]$, and $c \in [11, 14]$

---

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

$$15x^2 + 38x + 24 = 0$$

A. $x_1 \in [-20.24, -19.6]$ and $x_2 \in [-18.01, -17.97]$

B. $x_1 \in [-1.65, -1.2]$ and $x_2 \in [-1.24, -1.08]$

C. $x_1 \in [-3.15, -2.58]$ and $x_2 \in [-0.62, -0.58]$

D. $x_1 \in [-2.42, -1.89]$ and $x_2 \in [-0.71, -0.66]$

E. $x_1 \in [-6.01, -5.65]$ and $x_2 \in [-0.27, -0.22]$

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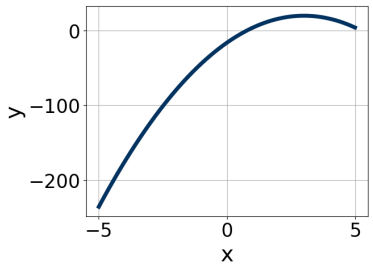
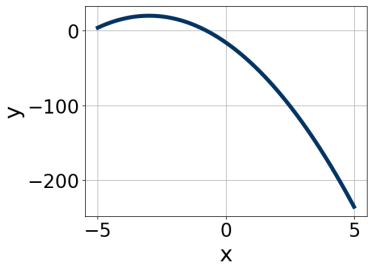
6. Graph the equation below.

$$f(x) = (x + 3)^2 + 20$$

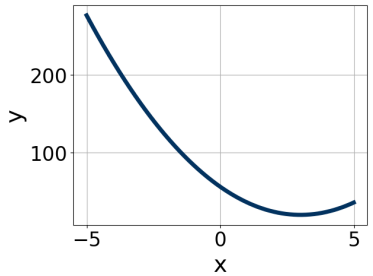
A.



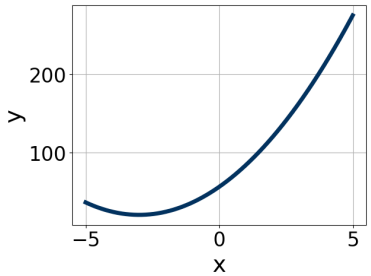
C.



B.



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 $(ax + b)(cx + d); b \leq d$.

$$36x^2 - 60x + 25$$

A. $a \in [-0.51, 2.66]$, $b \in [-31, -25]$, $c \in [-2, 2]$, and $d \in [-33, -25]$

B. $a \in [1.97, 3.52]$, $b \in [-8, -3]$, $c \in [12, 16]$, and $d \in [-8, 1]$

C. $a \in [5.91, 6.33]$, $b \in [-8, -3]$, $c \in [6, 11]$, and $d \in [-8, 1]$

D. $a \in [11.13, 12.66]$, $b \in [-8, -3]$, $c \in [2, 5]$, and $d \in [-8, 1]$

E. None of the above.

---

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

$$10x^2 - 57x + 54 = 0$$

A. $x_1 \in [0.87, 1.19]$ and $x_2 \in [6, 9]$

B. $x_1 \in [11.39, 12.23]$ and $x_2 \in [43, 46]$

C. $x_1 \in [1.08, 1.5]$ and $x_2 \in [3.5, 5.5]$

D. $x_1 \in [0.28, 0.53]$ and $x_2 \in [9.5, 20.5]$

E. $x_1 \in [2.2, 2.58]$ and $x_2 \in [-0.6, 4.4]$

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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).

$$12x^2 - 10x - 6 = 0$$

A. $x_1 \in [-19.6, -17.8]$ and $x_2 \in [19, 20.8]$

B. $x_1 \in [-0.8, 0.4]$ and $x_2 \in [0.9, 1.7]$

C. $x_1 \in [-5.6, -3.9]$ and $x_2 \in [14.7, 15.1]$

D. $x_1 \in [-4, -0.5]$ and $x_2 \in [-0.9, 1.2]$

E. There are no Real solutions.

10. 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. $a \in [2.55, 3.75]$, $b \in [-8, 0]$, $c \in [7.41, 8.02]$, and $d \in [-6, 5]$

B. $a \in [10.91, 13.92]$, $b \in [-8, 0]$, $c \in [1.81, 2.98]$, and $d \in [-6, 5]$

C. $a \in [-1.1, 2.34]$, $b \in [-21, -18]$, $c \in [0.03, 1.59]$, and $d \in [-21, -15]$

D. $a \in [4.44, 8.38]$, $b \in [-8, 0]$, $c \in [3.65, 5.66]$, and $d \in [-6, 5]$

E. None of the above.