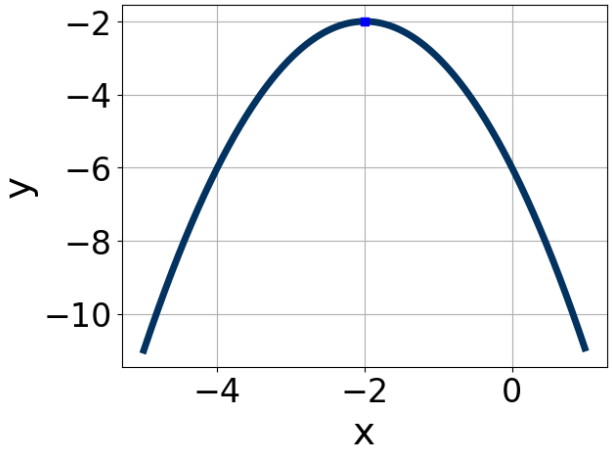
1. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-1.2, -0.3]$, $b \in [-5, -3]$, and $c \in [-6, -4]$

B. $a \in [-1.2, -0.3]$, $b \in [2, 5]$, and $c \in [-6, -4]$

C. $a \in [0.5, 2.1]$, $b \in [2, 5]$, and $c \in [-1, 6]$

D. $a \in [-1.2, -0.3]$, $b \in [2, 5]$, and $c \in [-4, -1]$

E. $a \in [0.5, 2.1]$, $b \in [-5, -3]$, and $c \in [-1, 6]$

---

2. 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. $a \in [10.69, 13.51]$, $b \in [-4, 9]$, $c \in [2, 4.4]$, and $d \in [4, 9]$

B. $a \in [1.73, 2.18]$, $b \in [-4, 9]$, $c \in [13.8, 19.2]$, and $d \in [4, 9]$

C. $a \in [-0.37, 1.15]$, $b \in [25, 33]$, $c \in [0.1, 1.8]$, and $d \in [26, 32]$

D. $a \in [5.91, 7.49]$, $b \in [-4, 9]$, $c \in [5.9, 6.9]$, and $d \in [4, 9]$

E. None of the above.

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

$$36x^2 + 35x + 6$$

A. $a \in [1.7, 3.7]$, $b \in [2, 4]$, $c \in [11.24, 12.81]$, and $d \in [1, 5]$

B. $a \in [5.7, 11.7]$, $b \in [2, 4]$, $c \in [2.99, 5.07]$, and $d \in [1, 5]$

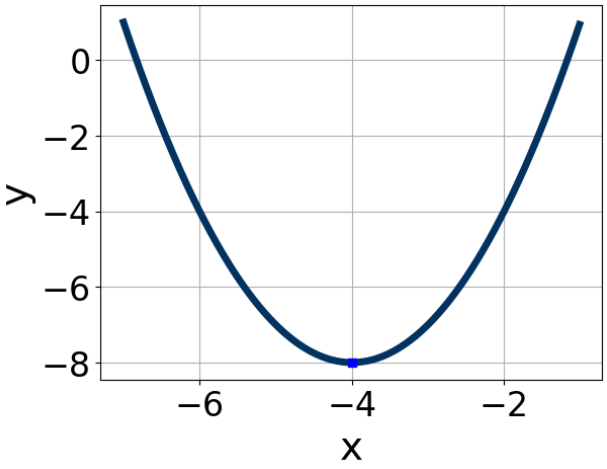
C. $a \in [-1.7, 1.5]$, $b \in [7, 16]$, $c \in [0.28, 1.69]$, and $d \in [27, 35]$

D. $a \in [12.4, 19.8]$, $b \in [2, 4]$, $c \in [1.81, 2.11]$, and $d \in [1, 5]$

E. None of the above.

---

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. $a \in [-0.4, 2.7]$, $b \in [-8, -5]$, and $c \in [8, 9]$

B. $a \in [-0.4, 2.7]$, $b \in [-8, -5]$, and $c \in [23, 29]$

C. $a \in [-2.5, -0.2]$, $b \in [6, 12]$, and $c \in [-26, -21]$

D. $a \in [-0.4, 2.7]$, $b \in [6, 12]$, and $c \in [8, 9]$

E. $a \in [-2.5, -0.2]$, $b \in [-8, -5]$, and $c \in [-26, -21]$

---

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

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

A. $x_1 \in [-45.07, -44.26]$ and $x_2 \in [29.85, 30.24]$

B. $x_1 \in [-5.68, -4.1]$ and $x_2 \in [0.28, 0.75]$

C. $x_1 \in [-9.76, -8.36]$ and $x_2 \in [-0.03, 0.27]$

D. $x_1 \in [-1.53, 0.93]$ and $x_2 \in [3.39, 4.24]$

E. $x_1 \in [-2.02, -1.74]$ and $x_2 \in [1.06, 1.45]$

---

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

$$20x^2 - 15x - 7 = 0$$

A. $x_1 \in [-0.8, 0.9]$ and $x_2 \in [0.7, 2.5]$

B. $x_1 \in [-3.5, -0.7]$ and $x_2 \in [-0.2, 0.6]$

C. $x_1 \in [-7.3, -5.7]$ and $x_2 \in [20.6, 21.8]$

D. $x_1 \in [-28, -25.6]$ and $x_2 \in [27.4, 29.8]$

E. There are no Real solutions.

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

$$-12x^2 + 14x + 5 = 0$$

A. $x_1 \in [-5.45, -0.45]$ and $x_2 \in [-1.6, 1.2]$

B. $x_1 \in [-19.44, -14.44]$ and $x_2 \in [2.5, 4.4]$

C. $x_1 \in [-22.3, -19.3]$ and $x_2 \in [21.2, 24]$

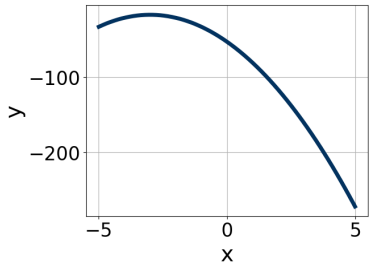
D. $x_1 \in [-1.29, 0.71]$ and $x_2 \in [0.9, 1.5]$

E. There are no Real solutions.

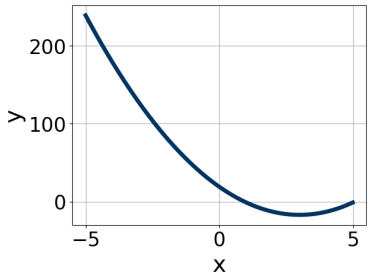
8. Graph the equation below.

$$f(x) = (x-3)^2 - 17$$

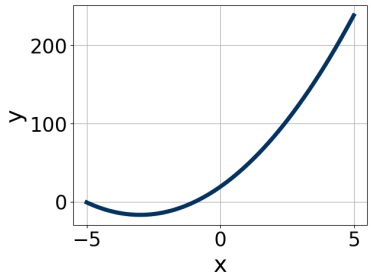
A.



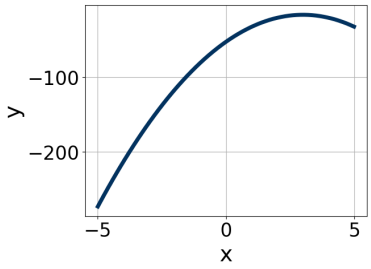
C.



B.



D.

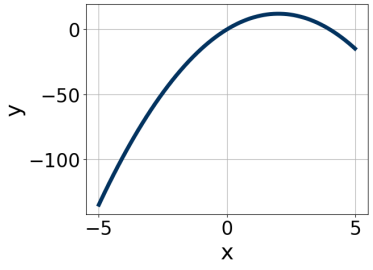


E. None of the above.

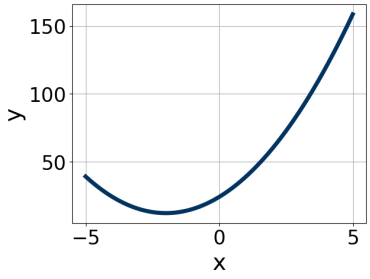
9. Graph the equation below.

$$f(x) = (x-2)^2 + 12$$

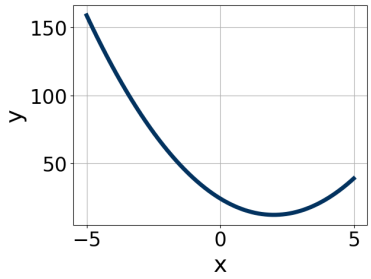
A.



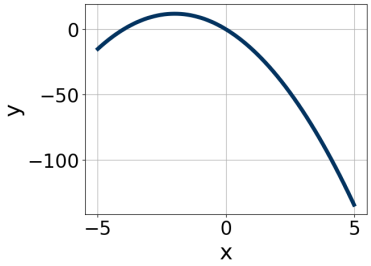
C.



B.



D.



E. None of the above.

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

$$12x^2 + 11x - 36 = 0$$

A. $x_1 \in [-1.72, -0.18]$ and $x_2 \in [3.69, 4.95]$

B. $x_1 \in [-3.63, -1.98]$ and $x_2 \in [1.06, 1.34]$

C. $x_1 \in [-4.71, -3.66]$ and $x_2 \in [0.58, 0.67]$

D. $x_1 \in [-28.26, -26.6]$ and $x_2 \in [15.84, 17.04]$

E. $x_1 \in [-10.26, -8.2]$ and $x_2 \in [-0.18, 0.65]$
