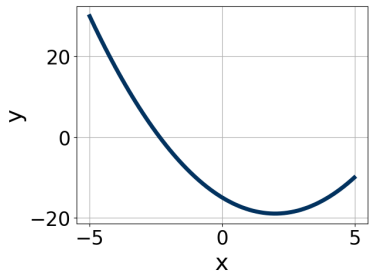
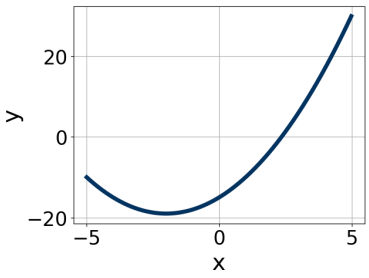
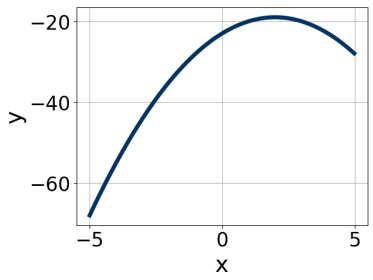
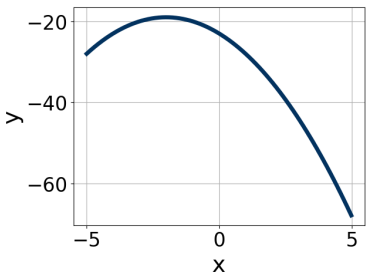
1. Graph the equation below.

$$f(x) = (x-2)^2 - 19$$

A.


C.


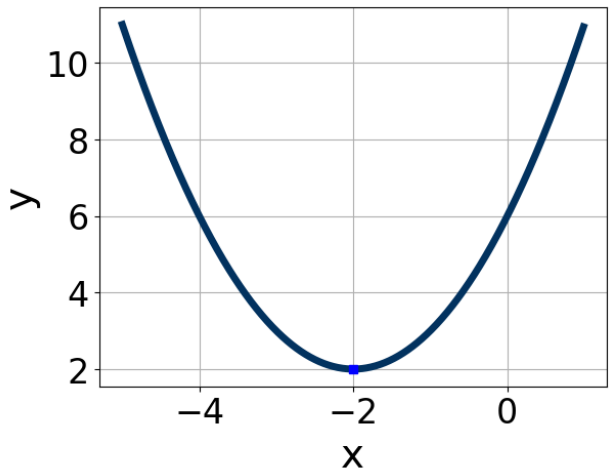
B.


D.


E. None of the above.

---

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. $a \in [-1, 0]$, $b \in [-5, -3]$, and $c \in [-2, 0]$

B. $a \in [1, 2]$, $b \in [1, 9]$, and $c \in [3, 10]$

C. $a \in [1, 2]$, $b \in [-5, -3]$, and $c \in [1, 4]$

D. $a \in [-1, 0]$, $b \in [1, 9]$, and $c \in [-2, 0]$

E. $a \in [1, 2]$, $b \in [-5, -3]$, and $c \in [3, 10]$

---

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

$$19x^2 - 10x - 3 = 0$$

A. $x_1 \in [-19.2, -16.3]$ and $x_2 \in [18.09, 18.49]$

B. $x_1 \in [-0.4, 0.5]$ and $x_2 \in [0.51, 1.15]$

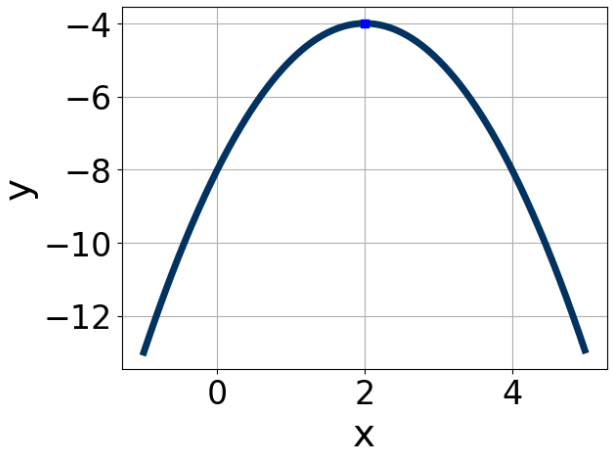
C. $x_1 \in [-6, -3.7]$ and $x_2 \in [13.35, 14.52]$

D. $x_1 \in [-1.3, -0.3]$ and $x_2 \in [-0.5, 0.37]$

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. $a \in [-1.8, -0.7]$, $b \in [-7, 1]$, and $c \in [0, 1]$

B. $a \in [0.6, 1.3]$, $b \in [-7, 1]$, and $c \in [0, 1]$

C. $a \in [-1.8, -0.7]$, $b \in [-7, 1]$, and $c \in [-9, -4]$

D. $a \in [-1.8, -0.7]$, $b \in [1, 7]$, and $c \in [-9, -4]$

E. $a \in [0.6, 1.3]$, $b \in [1, 7]$, and $c \in [0, 1]$

---

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

$$25x^2 + 60x + 36 = 0$$

A. $x_1 \in [-4.82, -2.63]$ and $x_2 \in [-0.48, -0.29]$

B. $x_1 \in [-6.91, -5.4]$ and $x_2 \in [-0.33, -0.22]$

C. $x_1 \in [-1.41, -0.49]$ and $x_2 \in [-1.26, -1.07]$

D. $x_1 \in [-2.76, -2.33]$ and $x_2 \in [-0.69, -0.51]$

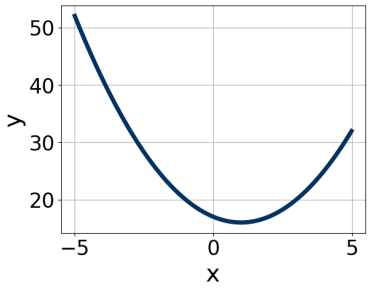
E. $x_1 \in [-30.24, -29.75]$ and $x_2 \in [-30.02, -29.88]$

---

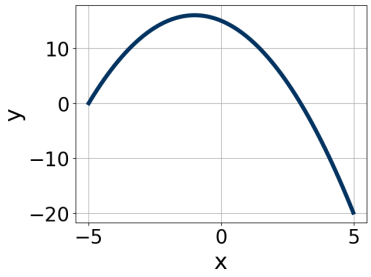
6. Graph the equation below.

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

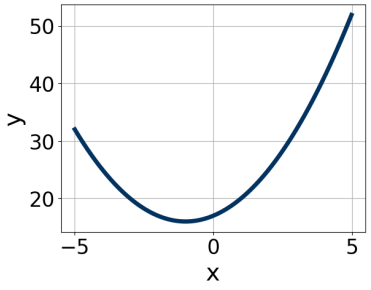
A.



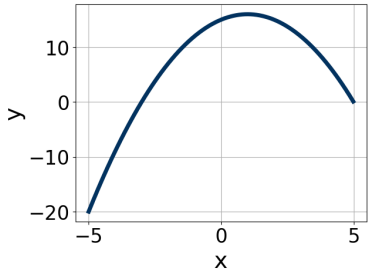
C.



B.



D.



E. None of the above.

---

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. $a \in [16.18, 18.1]$, $b \in [1, 9]$, $c \in [1.4, 3.28]$, and $d \in [-1, 9]$

B. $a \in [1.52, 3.58]$, $b \in [1, 9]$, $c \in [16.37, 19.52]$, and $d \in [-1, 9]$

C. $a \in [-0.33, 1.24]$, $b \in [30, 32]$, $c \in [0.64, 1.46]$, and $d \in [28, 36]$

D. $a \in [5.87, 6.69]$, $b \in [1, 9]$, $c \in [5.85, 7.56]$, and $d \in [-1, 9]$

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 $x_1 \leq x_2$.

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

A. $x_1 \in [0.41, 0.47]$ and $x_2 \in [5.58, 6.54]$

B. $x_1 \in [0.73, 0.8]$ and $x_2 \in [3.36, 4.24]$

C. $x_1 \in [23.99, 24]$ and $x_2 \in [44.97, 45.42]$

D. $x_1 \in [0.36, 0.44]$ and $x_2 \in [6.72, 7.17]$

E. $x_1 \in [1.19, 1.21]$ and $x_2 \in [2.08, 2.34]$

---

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

$$-17x^2 + 15x + 4 = 0$$

A. $x_1 \in [-22.3, -20.9]$ and $x_2 \in [22.32, 22.75]$

B. $x_1 \in [-19, -18.1]$ and $x_2 \in [3.64, 3.87]$

C. $x_1 \in [-0.7, 0.7]$ and $x_2 \in [0.88, 1.4]$

D. $x_1 \in [-2.7, -0.4]$ and $x_2 \in [-0.12, 0.54]$

E. There are no Real solutions.

---

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

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

A. $a \in [1.24, 2.2]$, $b \in [-9, -2]$, $c \in [14.2, 18.9]$, and $d \in [-13, -2]$

B. $a \in [0.21, 1.77]$, $b \in [-35, -24]$, $c \in [-0.3, 2.7]$, and $d \in [-30, -28]$

C. $a \in [10.92, 13.44]$, $b \in [-9, -2]$, $c \in [1.4, 5.6]$, and $d \in [-13, -2]$

D. $a \in [5.43, 6.17]$, $b \in [-9, -2]$, $c \in [3.4, 7.3]$, and $d \in [-13, -2]$

E. None of the above.
