1. 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. $x_1 \in [-7.75, -5.75]$ and $x_2 \in [-0.61, -0.37]$

B. $x_1 \in [-2.25, 2.75]$ and $x_2 \in [-1.31, -1]$

C. $x_1 \in [-45, -41]$ and $x_2 \in [-24.29, -23.83]$

D. $x_1 \in [-6.6, -2.6]$ and $x_2 \in [-1, -0.72]$

E. $x_1 \in [-10, -7]$ and $x_2 \in [-0.35, 0.19]$

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

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

A. $x_1 \in [-1.9, -1.2]$ and $x_2 \in [-0.9, 0.8]$

B. $x_1 \in [-20.7, -17.2]$ and $x_2 \in [19.9, 20.7]$

C. $x_1 \in [-1.3, 2.3]$ and $x_2 \in [1.2, 3.7]$

D. $x_1 \in [-15.9, -15.5]$ and $x_2 \in [2.4, 4.6]$

E. There are no Real solutions.

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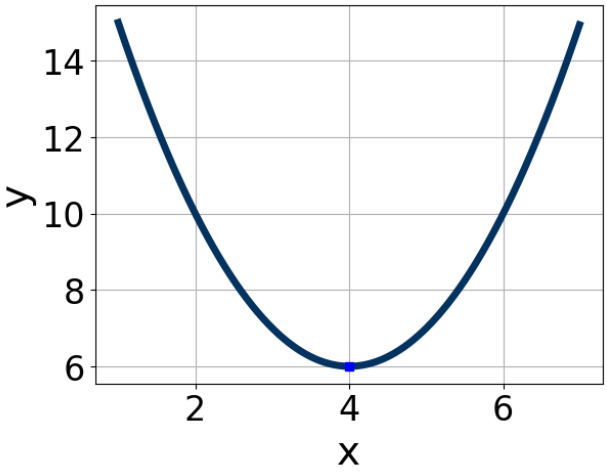
3. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [0.4, 1.8]$, $b \in [-9, -3]$, and $c \in [21, 24]$

B. $a \in [-1.2, -0.2]$, $b \in [-9, -3]$, and $c \in [-12, -8]$

C. $a \in [0.4, 1.8]$, $b \in [6, 9]$, and $c \in [21, 24]$

D. $a \in [0.4, 1.8]$, $b \in [6, 9]$, and $c \in [10, 11]$

E. $a \in [-1.2, -0.2]$, $b \in [6, 9]$, and $c \in [-12, -8]$

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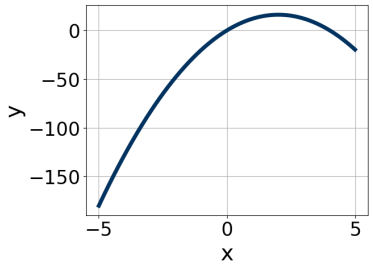
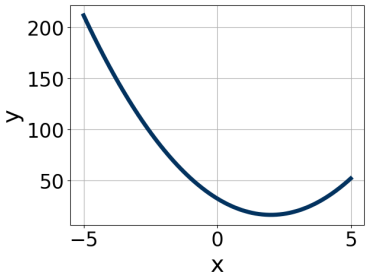
4. Graph the equation below.

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

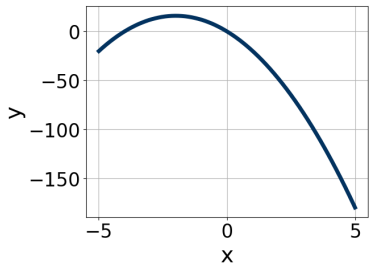
A.



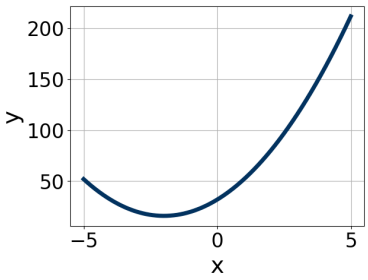
C.



B.



D.



E. None of the above.

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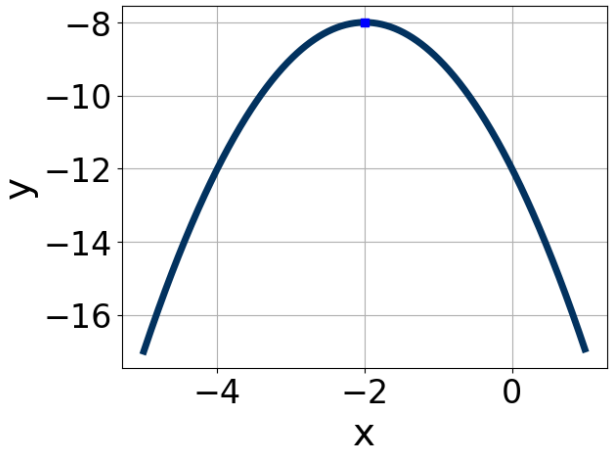
5. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-2, 0]$, $b \in [1, 6]$, and $c \in [3, 6]$

B. $a \in [-2, 0]$, $b \in [1, 6]$, and $c \in [-13, -8]$

C. $a \in [-2, 0]$, $b \in [-7, 0]$, and $c \in [-13, -8]$

D. $a \in [1, 2]$, $b \in [-7, 0]$, and $c \in [-7, 0]$

E. $a \in [1, 2]$, $b \in [1, 6]$, and $c \in [-7, 0]$

---

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

$$-20x^2 + 9x + 2 = 0$$

A. $x_1 \in [-0.2, 0.15]$ and $x_2 \in [0.33, 0.74]$

B. $x_1 \in [-0.83, -0.51]$ and $x_2 \in [-0.03, 0.33]$

C. $x_1 \in [-12.73, -11.88]$ and $x_2 \in [2.83, 3.48]$

D. $x_1 \in [-15.78, -14.86]$ and $x_2 \in [15.31, 15.79]$

E. There are no Real solutions.

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

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

A. $a \in [4.69, 6.85]$, $b \in [2, 10]$, $c \in [3.3, 8.5]$, and $d \in [1, 10]$

B. $a \in [-0.88, 1.76]$, $b \in [18, 22]$, $c \in [-0.7, 1.7]$, and $d \in [26, 34]$

C. $a \in [1.77, 2.45]$, $b \in [2, 10]$, $c \in [10.9, 12.3]$, and $d \in [1, 10]$

D. $a \in [11.12, 12.58]$, $b \in [2, 10]$, $c \in [1.9, 2.9]$, and $d \in [1, 10]$

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 $x_1 \leq x_2$.

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

A. $x_1 \in [0.3, 0.52]$ and $x_2 \in [3.39, 4.17]$

B. $x_1 \in [29.74, 30.12]$ and $x_2 \in [28.62, 30.15]$

C. $x_1 \in [0.13, 0.39]$ and $x_2 \in [5.64, 6.62]$

D. $x_1 \in [1.05, 1.38]$ and $x_2 \in [0.13, 2.18]$

E. $x_1 \in [0.49, 0.71]$ and $x_2 \in [1.51, 2.9]$

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

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

A. $a \in [2.6, 5.7]$, $b \in [-5, -4]$, $c \in [17.86, 18.4]$, and $d \in [2, 6]$

B. $a \in [-1.5, 1.6]$, $b \in [-31, -25]$, $c \in [0, 1.33]$, and $d \in [45, 48]$

C. $a \in [6.3, 10.6]$, $b \in [-5, -4]$, $c \in [4.79, 6.55]$, and $d \in [2, 6]$

D. $a \in [17.6, 20.1]$, $b \in [-5, -4]$, $c \in [1.26, 4.1]$, and $d \in [2, 6]$

E. None of the above.

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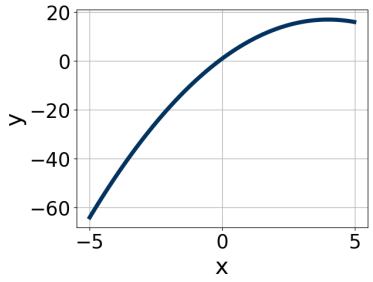
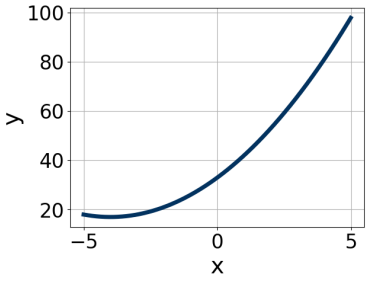
10. Graph the equation below.

$$f(x) = (x-4)^2 + 17$$

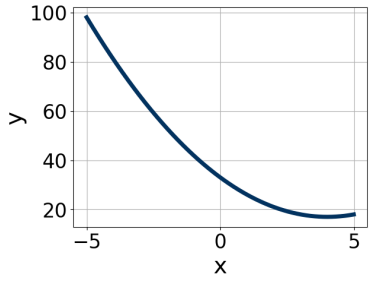
A.



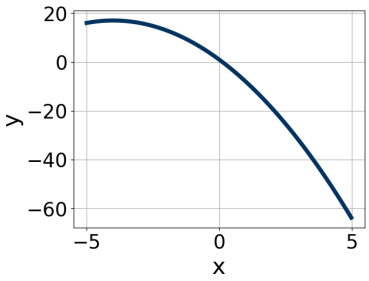
C.



B.



D.



E. None of the above.
