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

$$18x^2 - 11x - 8 = 0$$

  A. $x_1 \in [-27.01, -25.6]$ and $x_2 \in [25.82, 27.31]$

  B. $x_1 \in [-0.48, -0.21]$ and $x_2 \in [0.98, 1.2]$

  C. $x_1 \in [-1.14, -0.7]$ and $x_2 \in [0.01, 0.62]$

  D. $x_1 \in [-8.5, -7.69]$ and $x_2 \in [17.7, 19.14]$

  E. There are no Real solutions.

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

$$18x^2 + 12x - 5 = 0$$

  A. $x_1 \in [-1.29, -0.77]$ and $x_2 \in [-1, 0.8]$

  B. $x_1 \in [-0.77, -0.07]$ and $x_2 \in [0.9, 2.6]$

  C. $x_1 \in [-17.51, -17.04]$ and $x_2 \in [3.9, 5.6]$

  D. $x_1 \in [-22.98, -22.17]$ and $x_2 \in [21, 24.6]$
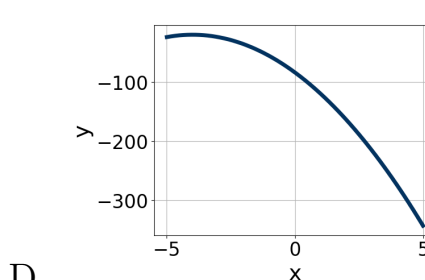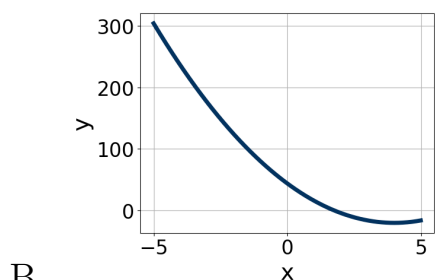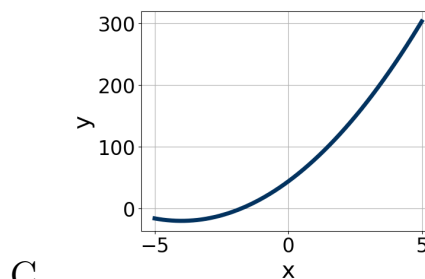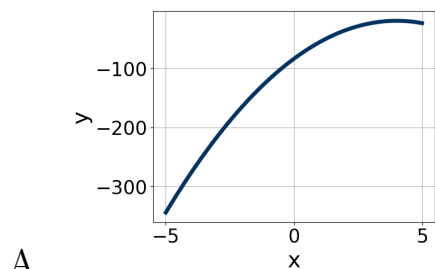
  E. There are no Real solutions.

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

$$25x^2 + 50x + 24 = 0$$

  A. $x_1 \in [-2.55, -2.29]$ and $x_2 \in [-0.46, -0.24]$

  B. $x_1 \in [-2.02, -1.49]$ and $x_2 \in [-0.74, -0.46]$

  C. $x_1 \in [-6.7, -5.06]$ and $x_2 \in [-0.39, -0.07]$

  D. $x_1 \in [-1.3, -0.91]$ and $x_2 \in [-0.94, -0.78]$

  E. $x_1 \in [-30.47, -29.65]$ and $x_2 \in [-20.03, -19.8]$

4. Graph the equation below.

$$f(x) = (x-4)^2 - 20$$

A.

C.

B.

D.

E. None of the above.

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

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

A. $a \in [0.8, 2.35]$, $b \in [30, 31]$, $c \in [-1.2, 2.5]$, and $d \in [28, 32]$

B. $a \in [11.56, 12.87]$, $b \in [-2, 10]$, $c \in [2.2, 5.1]$, and $d \in [1, 13]$

C. $a \in [5.67, 6.37]$, $b \in [-2, 10]$, $c \in [4.1, 8.3]$, and $d \in [1, 13]$

D. $a \in [2.78, 4.14]$, $b \in [-2, 10]$, $c \in [8.6, 14.2]$, and $d \in [1, 13]$
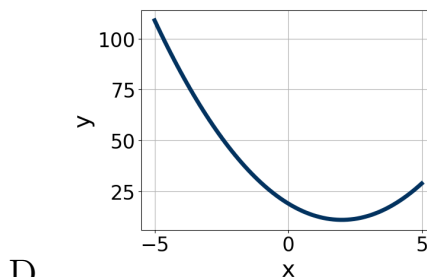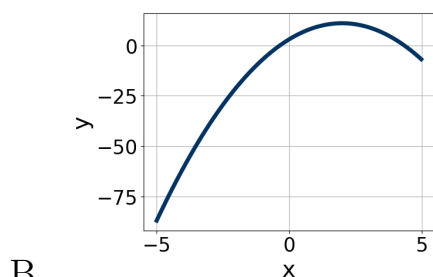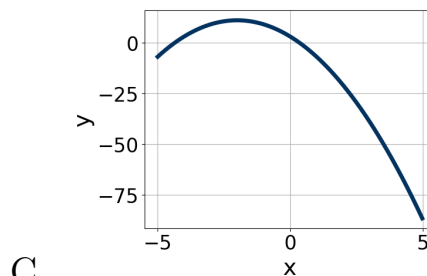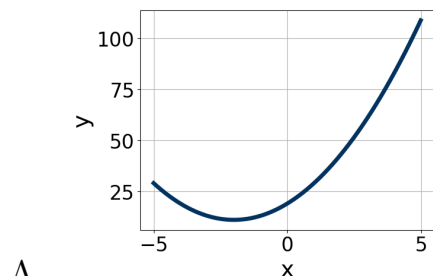
E. None of the above.

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

$$36x^2 - 61x + 20$$

A. $a \in [1.55, 2.96]$, $b \in [-6, 2]$, $c \in [14.5, 18.7]$, and $d \in [-9, -2]$

B. $a \in [0.97, 1.75]$, $b \in [-45, -39]$, $c \in [-3.7, 1.4]$, and $d \in [-19, -15]$

C. $a \in [11.74, 12.53]$, $b \in [-6, 2]$, $c \in [2.5, 3.4]$, and $d \in [-9, -2]$

D. $a \in [2.5, 5.2]$, $b \in [-6, 2]$, $c \in [6.6, 10.1]$, and $d \in [-9, -2]$

E. None of the above.

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7. Graph the equation below.

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


A.

C.

B.

D.

E. None of the above.

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

$$25x^2 + 50x + 24 = 0$$

A. $x_1 \in [-2.75, -2.08]$ and $x_2 \in [-0.47, -0.38]$

B. $x_1 \in [-1.24, -0.86]$ and $x_2 \in [-1.09, -0.71]$

C. $x_1 \in [-30.1, -29.52]$ and $x_2 \in [-20.09, -19.88]$

D. $x_1 \in [-6.17, -5.8]$ and $x_2 \in [-0.29, 0.02]$

E. $x_1 \in [-1.77, -1.22]$ and $x_2 \in [-0.65, -0.41]$

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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.
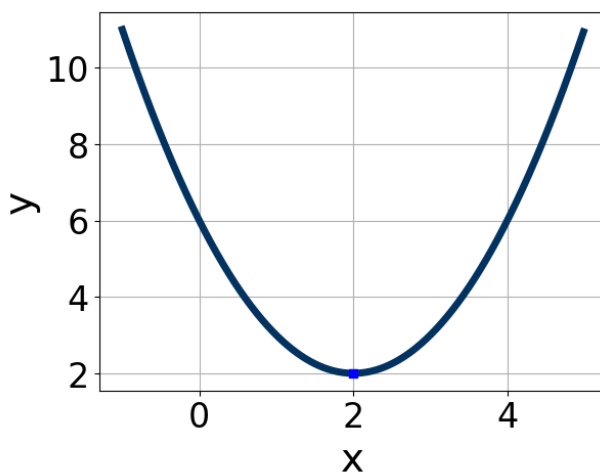
A. $a \in [0, 4]$, $b \in [-5, -1]$, and $c \in [6, 8]$

B. $a \in [0, 4]$, $b \in [3, 8]$, and $c \in [2, 3]$

C. $a \in [-1, 0]$, $b \in [3, 8]$, and $c \in [-3, 0]$

D. $a \in [0, 4]$, $b \in [3, 8]$, and $c \in [6, 8]$

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

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10. 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.
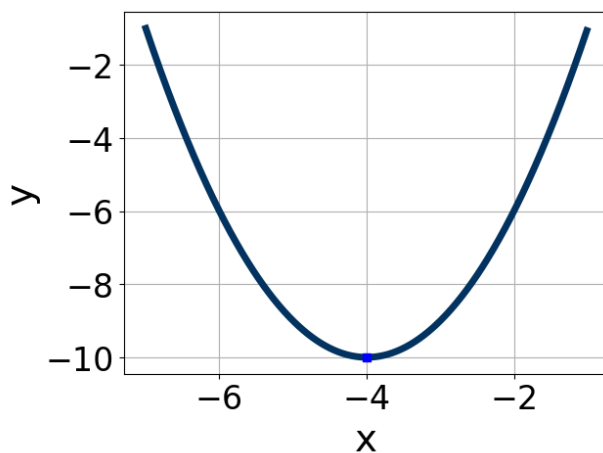
A. $a \in [-1.4, -0.9]$, $b \in [6, 11]$, and $c \in [-27, -25]$

B. $a \in [0.3, 2.1]$, $b \in [-12, -6]$, and $c \in [24, 30]$

C. $a \in [-1.4, -0.9]$, $b \in [-12, -6]$, and $c \in [-27, -25]$

D. $a \in [0.3, 2.1]$, $b \in [6, 11]$, and $c \in [4, 9]$

E. $a \in [0.3, 2.1]$, $b \in [-12, -6]$, and $c \in [4, 9]$