

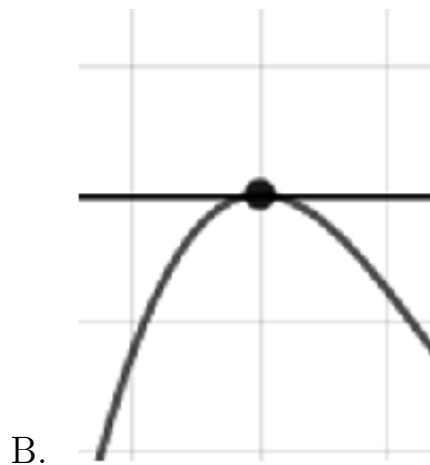
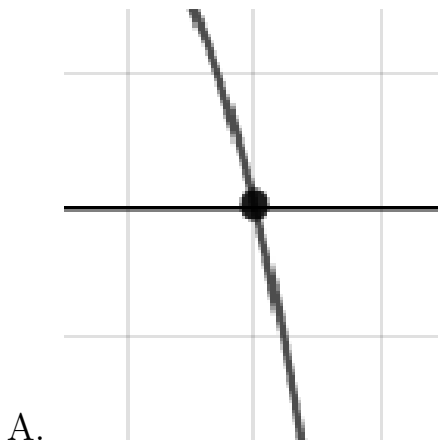
1. Construct the lowest-degree polynomial given the zeros below. Then, choose the intervals that contain the coefficients of the polynomial in the form $ax^3 + bx^2 + cx + d$.

$$\frac{4}{5}, \frac{-7}{4}, \text{ and } \frac{5}{3}$$

- A. $a \in [57, 68], b \in [52, 55], c \in [-173, -166],$ and $d \in [-143, -138]$
B. $a \in [57, 68], b \in [42, 47], c \in [-186, -177],$ and $d \in [-143, -138]$
C. $a \in [57, 68], b \in [-48, -38], c \in [-186, -177],$ and $d \in [137, 145]$
D. $a \in [57, 68], b \in [-48, -38], c \in [-186, -177],$ and $d \in [-143, -138]$
E. $a \in [57, 68], b \in [-165, -155], c \in [8, 12],$ and $d \in [137, 145]$
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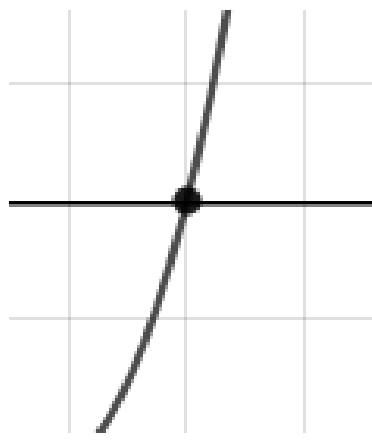
2. Describe the zero behavior of the zero $x = 5$ of the polynomial below.

$$f(x) = 2(x + 6)^{11}(x - 6)^8(x + 5)^9(x - 5)^8$$





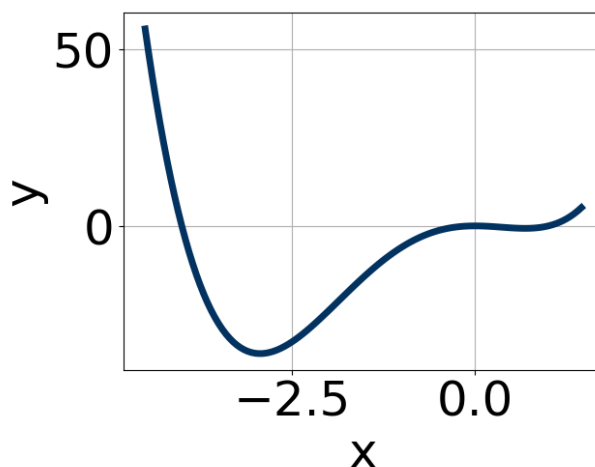
C.



D.

E. None of the above.

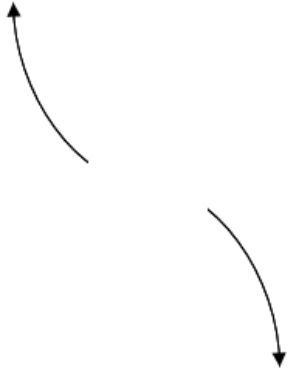
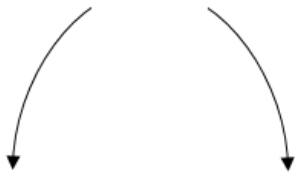
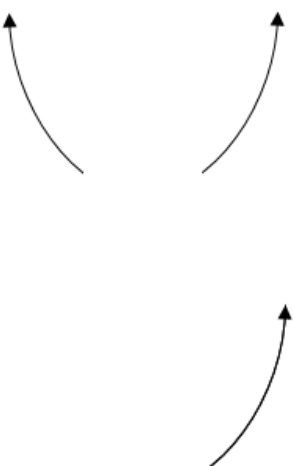

3. Which of the following equations *could* be of the graph presented below?



- A. $19x^8(x-1)^7(x+4)^5$
- B. $-18x^{10}(x-1)^9(x+4)^{11}$
- C. $19x^{10}(x-1)^4(x+4)^7$
- D. $-15x^6(x-1)^9(x+4)^4$
- E. $17x^7(x-1)^6(x+4)^7$

4. Describe the end behavior of the polynomial below.

$$f(x) = -3(x - 9)^2(x + 9)^3(x + 2)^4(x - 2)^6$$

- A. 
- B. 
- C. 
- D. 
- E. None of the above.

5. Construct the lowest-degree polynomial given the zeros below. Then, choose the intervals that contain the coefficients of the polynomial in the form $x^3 + bx^2 + cx + d$.

$$3 + 4i \text{ and } -4$$

- A. $b \in [0.9, 1.29], c \in [0.57, 2.03], \text{ and } d \in [-15, -9]$
- B. $b \in [0.9, 1.29], c \in [-0.81, 0.51], \text{ and } d \in [-23, -14]$
- C. $b \in [-2.11, -1.02], c \in [0.57, 2.03], \text{ and } d \in [98, 102]$
- D. $b \in [1.03, 2.65], c \in [0.57, 2.03], \text{ and } d \in [-101, -98]$
- E. None of the above.