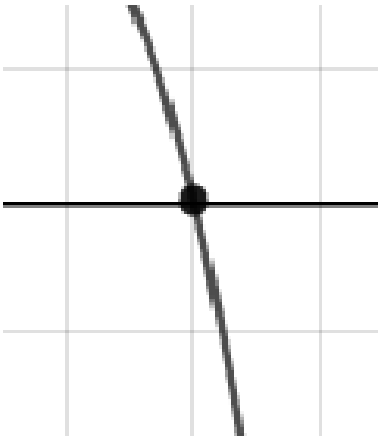
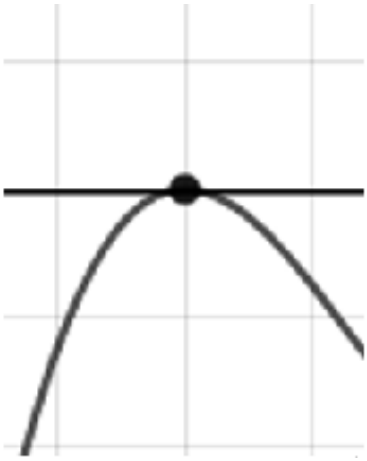
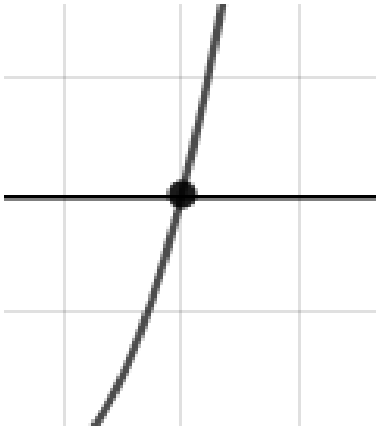
1. Describe the zero behavior of the zero $x = 6$ of the polynomial below.

$$f(x) = 4(x-3)^7(x+3)^6(x-6)^{10}(x+6)^9$$

A. 

C. 

B. 

D. 

E. None of the above.

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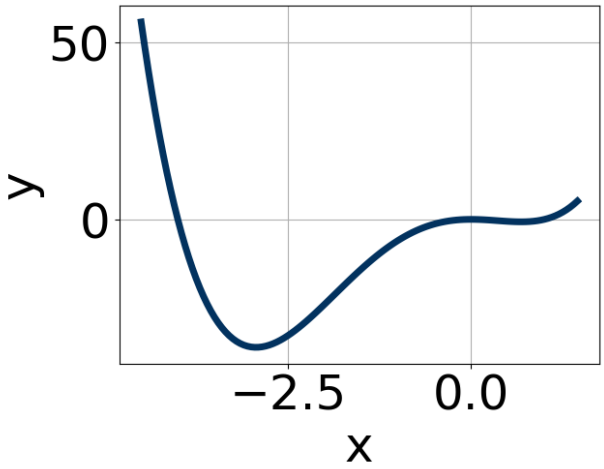
2. Which of the following equations *could* be of the graph presented below?



A. $14x^4(x-1)^6(x+4)^7$

B. $14x^8(x-1)^5(x+4)^9$

C. $18x^5(x-1)^4(x+4)^{11}$

D. $-19x^{10}(x-1)^{11}(x+4)^{11}$

E. $-9x^4(x-1)^9(x+4)^8$

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

$$-3 + 2i \text{ and } -1$$

A. $b \in [-4, 2], c \in [-2, 0],$ and $d \in [-6, 1]$

B. $b \in [-8, -2], c \in [18, 27],$ and $d \in [-16, -12]$

C. $b \in [4, 9], c \in [18, 27],$ and $d \in [4, 14]$

D. $b \in [-4, 2], c \in [2, 9],$ and $d \in [0, 4]$

E. None of the above.

---

4. Construct the lowest-degree polynomial given the zeros below. Then, choose the intervals that contain the coefficients of the polynomial in

the form $ax^3 + bx^2 + cx + d$.

$$5, \frac{-2}{3}, \text{ and } \frac{-3}{2}$$

A. $a \in [1, 10], b \in [-19, -11], c \in [-60, -48],$ and $d \in [25, 33]$

B. $a \in [1, 10], b \in [-19, -11], c \in [-60, -48],$ and $d \in [-33, -29]$

C. $a \in [1, 10], b \in [32, 40], c \in [17, 20],$ and $d \in [-33, -29]$

D. $a \in [1, 10], b \in [9, 21], c \in [-60, -48],$ and $d \in [25, 33]$

E. $a \in [1, 10], b \in [39, 46], c \in [69, 83],$ and $d \in [25, 33]$

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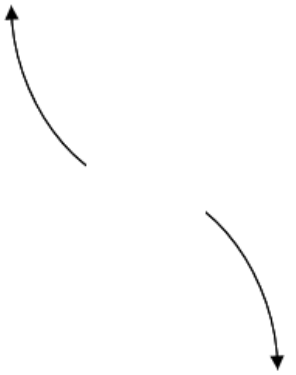
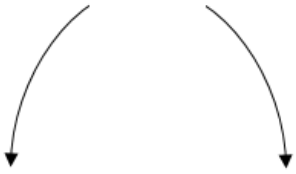
5. Describe the end behavior of the polynomial below.

$$f(x) = -7(x-6)^3(x+6)^8(x+9)^5(x-9)^6$$

A.

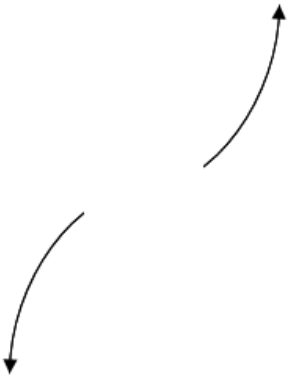


B.



C.

D.



E. None of the above.
