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

$$-4 + 3i \text{ and } -2$$

A. $b \in [0, 3], c \in [0, 15],$ and $d \in [5, 16]$

B. $b \in [2, 11], c \in [39, 42],$ and $d \in [45, 57]$

C. $b \in [-16, -5], c \in [39, 42],$ and $d \in [-57, -42]$

D. $b \in [0, 3], c \in [-2, 3],$ and $d \in [-7, -3]$

E. None of the above.

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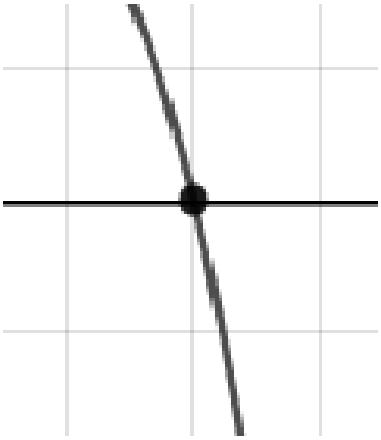
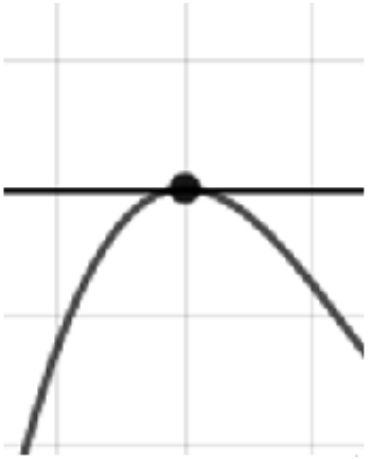
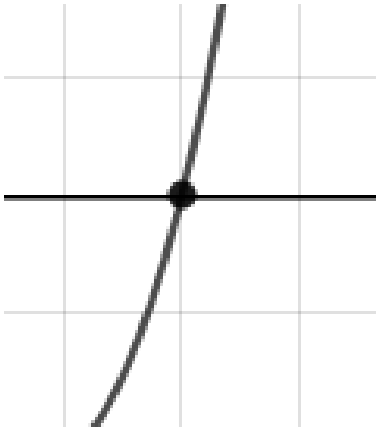
2. Describe the zero behavior of the zero $x = -4$ of the polynomial below.

$$f(x) = 7(x-7)^{10}(x+7)^9(x+4)^{14}(x-4)^9$$

A. 

B. 

C. 

D. 

E. None of the above.

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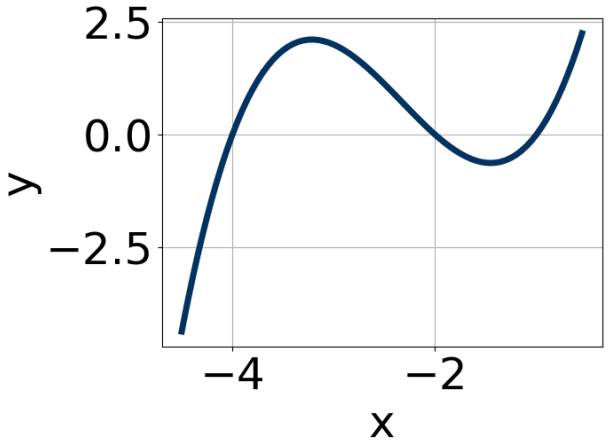
3. Which of the following equations *could* be of the graph presented below?



A. $9(x+2)^6(x+4)^6(x+1)^7$

B. $-2(x+2)^4(x+4)^9(x+1)^9$

C. $-5(x+2)^5(x+4)^9(x+1)^5$

D. $15(x+2)^8(x+4)^9(x+1)^7$

E. $5(x+2)^5(x+4)^9(x+1)^{11}$

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

$$\frac{1}{5}, \frac{-3}{5}, \text{ and } \frac{-4}{5}$$

A. $a \in [122, 131], b \in [192, 206], c \in [90, 102],$ and $d \in [7, 15]$

B. $a \in [122, 131], b \in [144, 159], c \in [24, 29],$ and $d \in [-17, -7]$

C. $a \in [122, 131], b \in [-154, -145], c \in [24, 29],$ and $d \in [7, 15]$

D. $a \in [122, 131], b \in [144, 159], c \in [24, 29],$ and $d \in [7, 15]$

E. $a \in [122, 131], b \in [46, 53], c \in [-57, -51],$ and $d \in [-17, -7]$

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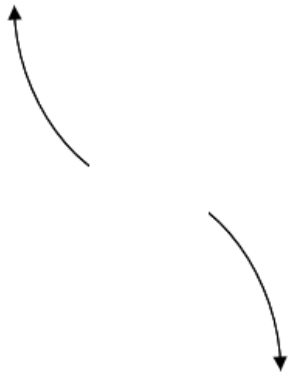
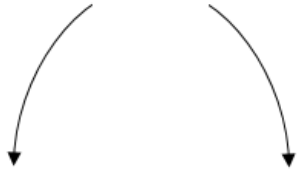
5. Describe the end behavior of the polynomial below.

$$f(x) = -3(x-6)^3(x+6)^8(x-5)^4(x+5)^5$$

A.

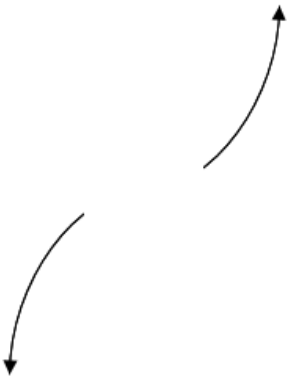


B.



C.

D.



E. None of the above.
