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

$$-1, -6, \text{ and } \frac{5}{2}$$

A. $a \in [1, 4], b \in [8, 10.2], c \in [-27, -22],$ and $d \in [-36, -26]$

B. $a \in [1, 4], b \in [8, 10.2], c \in [-27, -22],$ and $d \in [23, 31]$

C. $a \in [1, 4], b \in [-19.9, -15.6], c \in [42, 56],$ and $d \in [-36, -26]$

D. $a \in [1, 4], b \in [-12.1, -5.2], c \in [-27, -22],$ and $d \in [23, 31]$

E. $a \in [1, 4], b \in [4.5, 8.8], c \in [-39, -32],$ and $d \in [23, 31]$

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2. 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. $b \in [5, 17], c \in [6, 9.1],$ and $d \in [-53.4, -49.1]$

B. $b \in [0, 4], c \in [-3.7, -1.4],$ and $d \in [-11, -7.5]$

C. $b \in [-14, 0], c \in [6, 9.1],$ and $d \in [49.6, 50.9]$

D. $b \in [0, 4], c \in [-1.8, 0.5],$ and $d \in [-6.5, -1.6]$

E. None of the above.

---

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

$$-5 + 3i \text{ and } -1$$

A. $b \in [-9, 7], c \in [-3, 0],$ and $d \in [-5, 0]$

B. $b \in [-9, 7], c \in [0, 12],$ and $d \in [1, 7]$

C. $b \in [8, 18], c \in [40, 48],$ and $d \in [32, 38]$

D. $b \in [-13, -7], c \in [40, 48],$ and $d \in [-34, -25]$

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

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

A. $a \in [6, 17], b \in [61, 69], c \in [102, 110],$ and $d \in [44, 50]$

B. $a \in [6, 17], b \in [-3, 3], c \in [-79, -76],$ and $d \in [44, 50]$

C. $a \in [6, 17], b \in [46, 56], c \in [41, 44],$ and $d \in [-48, -41]$

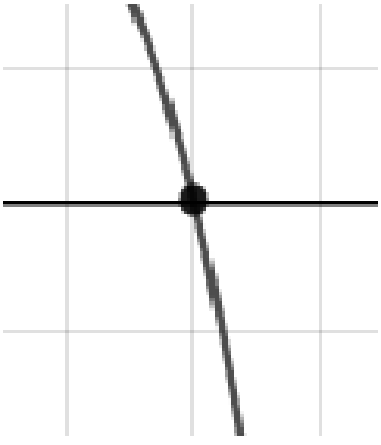
D. $a \in [6, 17], b \in [-61, -59], c \in [102, 110],$ and $d \in [-48, -41]$

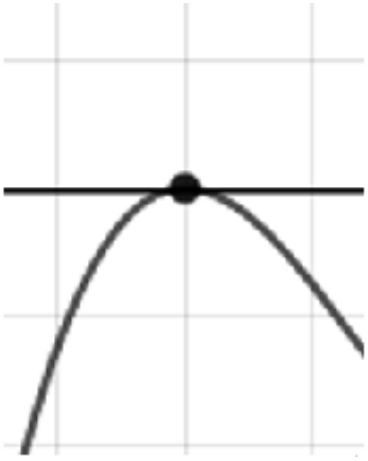
E. $a \in [6, 17], b \in [-61, -59], c \in [102, 110],$ and $d \in [44, 50]$

---

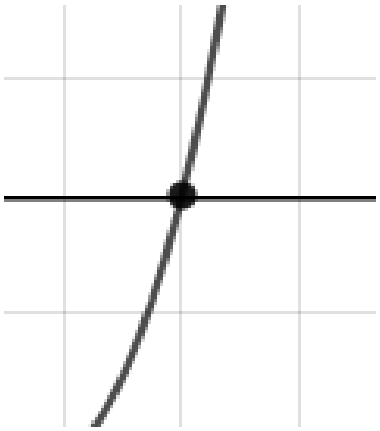
5. Describe the zero behavior of the zero $x = -5$ of the polynomial below.

$$f(x) = 7(x + 7)^{11}(x - 7)^8(x + 5)^3(x - 5)^2$$

A. 

B. 

C. 

D. 

E. None of the above.

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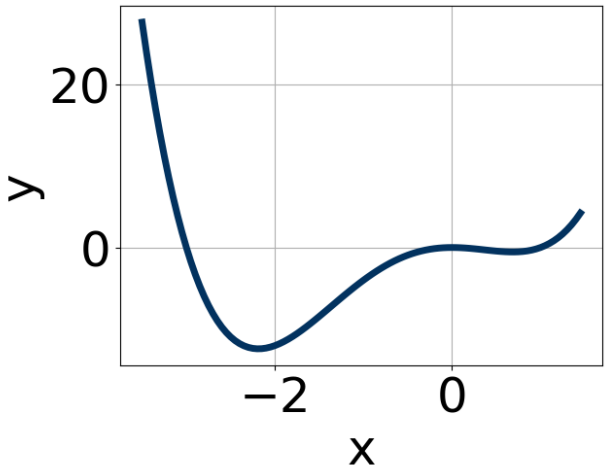
6. Which of the following equations *could* be of the graph presented below?



A. $4x^8(x-1)^6(x+3)^9$

B. $7x^6(x-1)^5(x+3)^9$

C. $-19x^8(x-1)^7(x+3)^7$

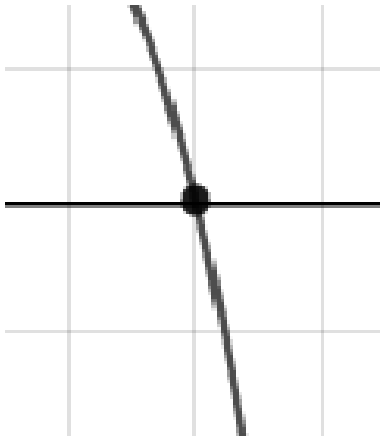
D. $-10x^{10}(x-1)^{11}(x+3)^{10}$

E. $9x^{11}(x-1)^{10}(x+3)^9$

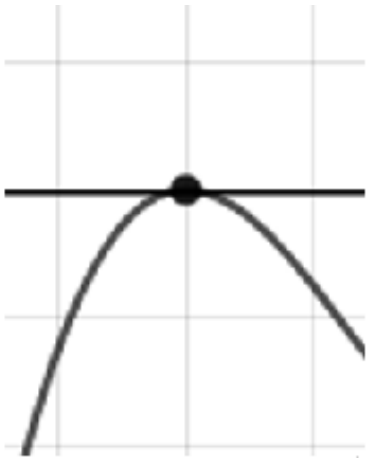
---

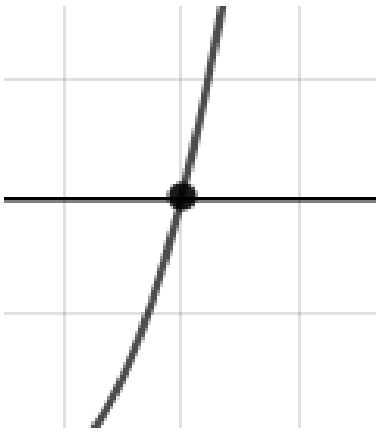
7. Describe the zero behavior of the zero $x=-3$ of the polynomial below.

$$f(x)=9(x+3)^3(x-3)^8(x+2)^4(x-2)^5$$

A. 

C. 

B. 

D. 

E. None of the above.

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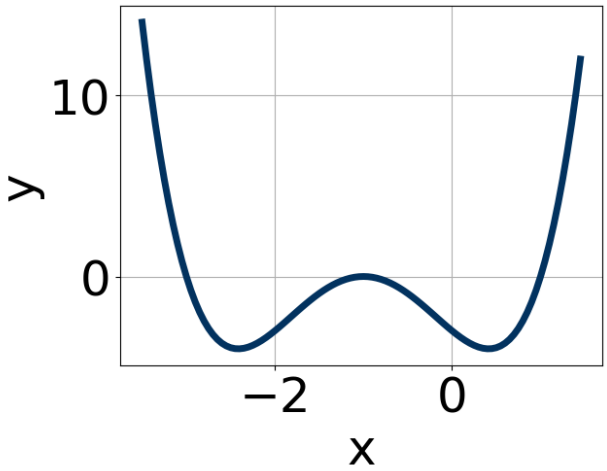
8. Which of the following equations *could* be of the graph presented below?



A. $17(x+1)^8(x+3)^{11}(x-1)^{11}$

B. $-18(x+1)^{10}(x+3)^5(x-1)^8$

C. $11(x+1)^8(x+3)^8(x-1)^{11}$

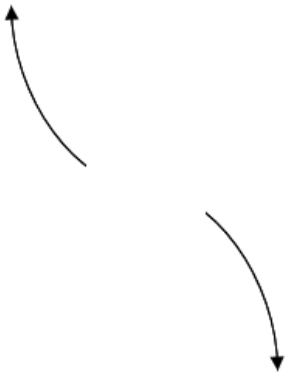
D. $-10(x+1)^6(x+3)^{11}(x-1)^9$

E. $11(x+1)^5(x+3)^6(x-1)^9$

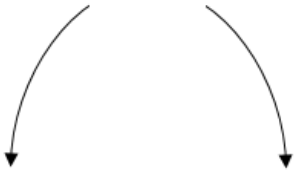
---

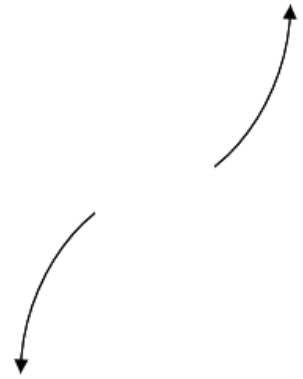
9. Describe the end behavior of the polynomial below.

$$f(x) = 7(x+6)^4(x-6)^5(x-8)^5(x+8)^5$$

A. 

C. 

B. 

D. 

E. None of the above.

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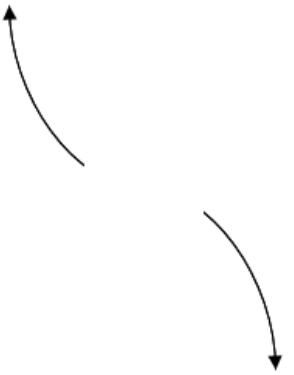
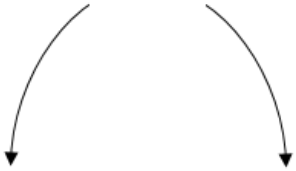
10. Describe the end behavior of the polynomial below.

$$f(x) = -5(x+7)^2(x-7)^3(x+3)^2(x-3)^4$$

A.

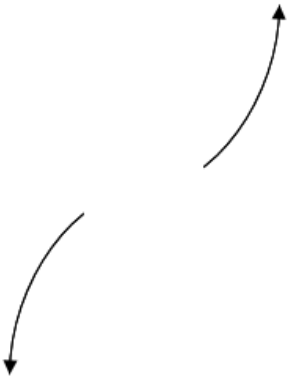


B.



C.

D.



E. None of the above.