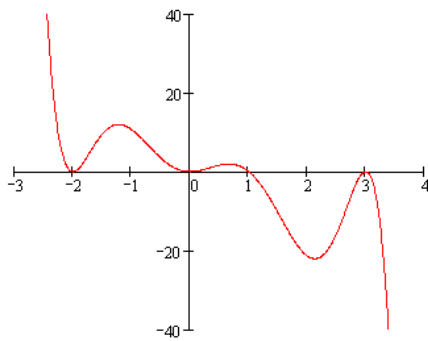


Based on the graph, answer the question below:



1. What must the least possible degree be? Give two reasons as to how you know (bullet points).

Least possible degree? \_\_\_\_\_

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2. What would the range be of a 9<sup>th</sup> degree polynomial?

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3. Give an example of a graph that has the following solutions:  $x = -1$ ;  $x = 2, 2$ ; and  $x = 5, 5, 5$

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If  $f(2) = 3$ ,  $f(-2) = 0$ , and  $f(0) = 4$ , then answer questions 4 - 5

4. If we divide by  $x - 2$ , then what is the remainder?

5. What is a factor we know?

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6. **Solve** by factoring  $8x^3 - 64 = 0$

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7. Find all roots and write them as **linear factors**

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

8. Find all **x-intercepts**  $f(x) = x^4 + 4x^3 + x^2$

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9. Find all **roots**  $f(x) = x^3 + 6x^2 - 6x - 1$

10. Find all the **solutions**  $x^3 - 5x^2 = -3x + 15$

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