Question 1

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Solution: 122.2 ft

Question 2

A function has roots at $x = 2$ and $x = 4$. What does Rolle's theorem tell us about this function?

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Solution: There is a point in $(2, 4)$ where $f'(x) = 0$.

Question 3

Find the critical numbers of the function

$$g(y) = \frac{y-1}{y^2 - y + 1}$$

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Solution: 0 and 2

Question 4

Find the absolute max and min values of

$$f(x) = 2x^3 - 3x^2 - 12x + 1 \quad \text{on} \quad [-2, 3]$$

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Solution: min: $f(2) = -19$ max: $f(-1) = 8$

Question 5

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Solution: $0, 1, \frac{4}{7}$