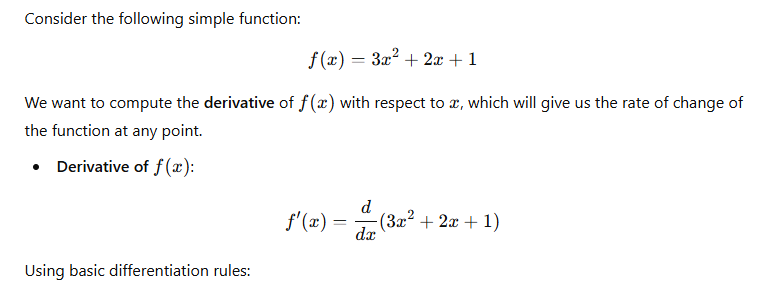
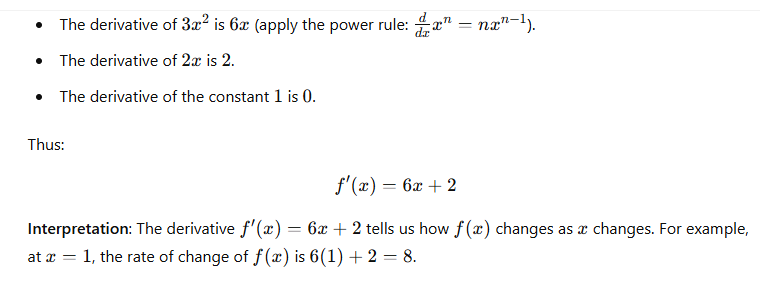
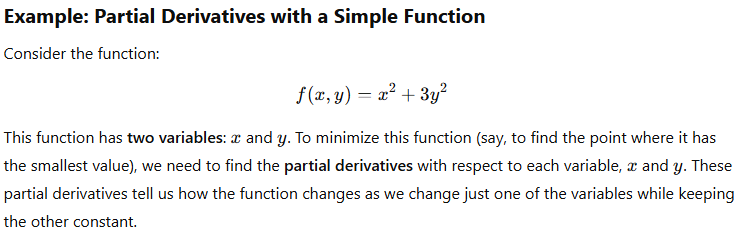
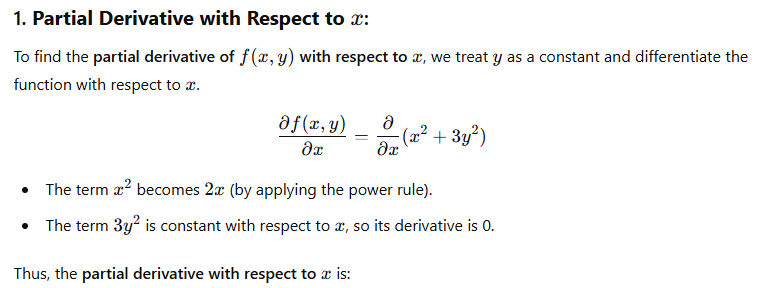
**Derivatives**

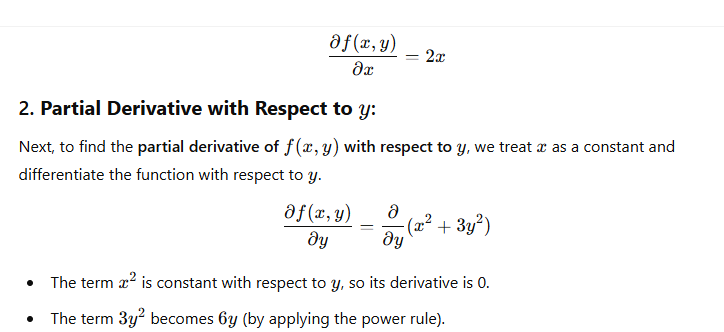
**Example: Single-variable function**

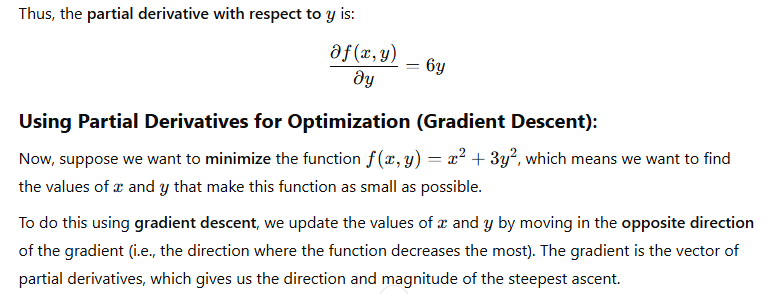


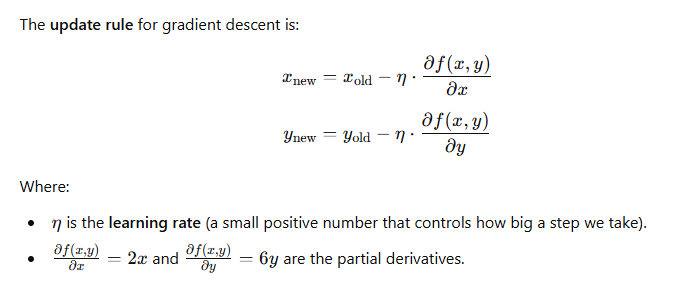


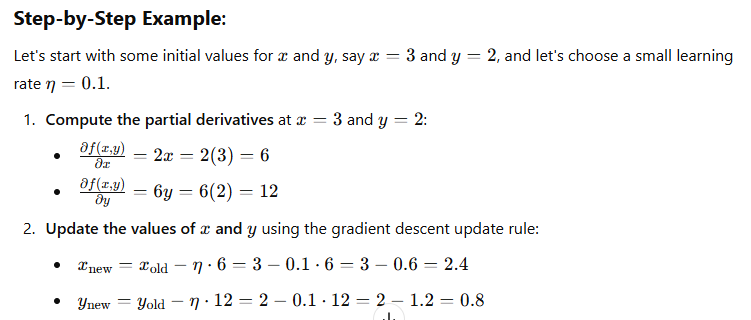


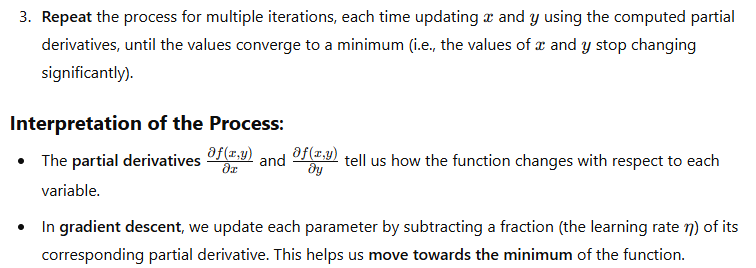


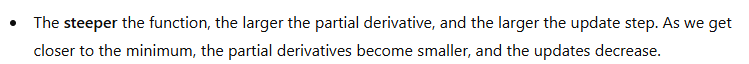




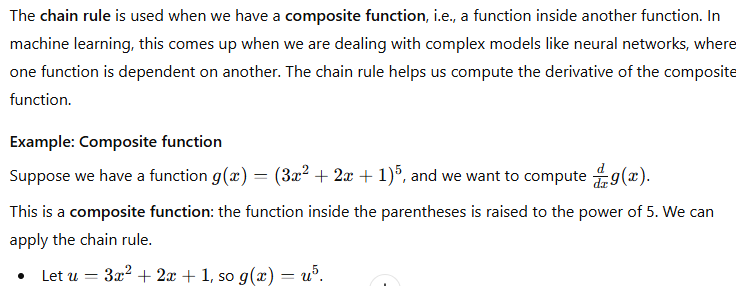


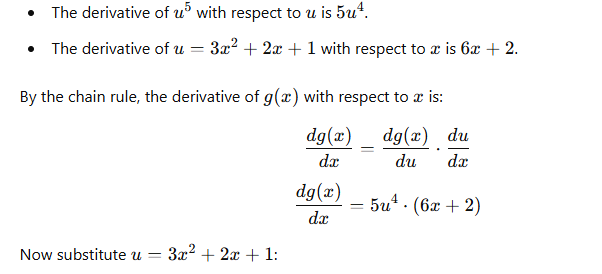


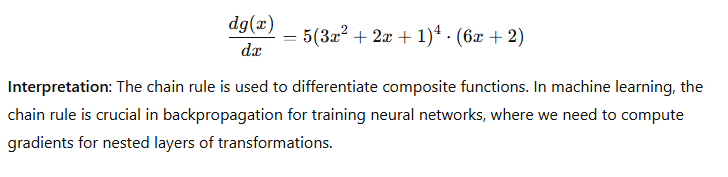


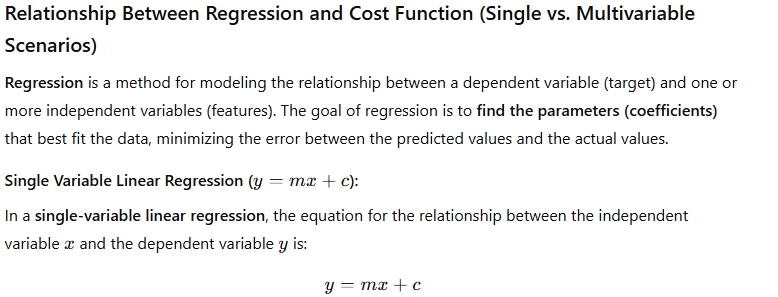


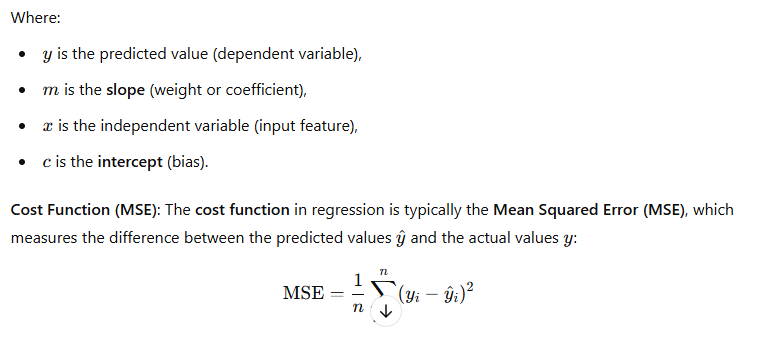
**Chain Rule**

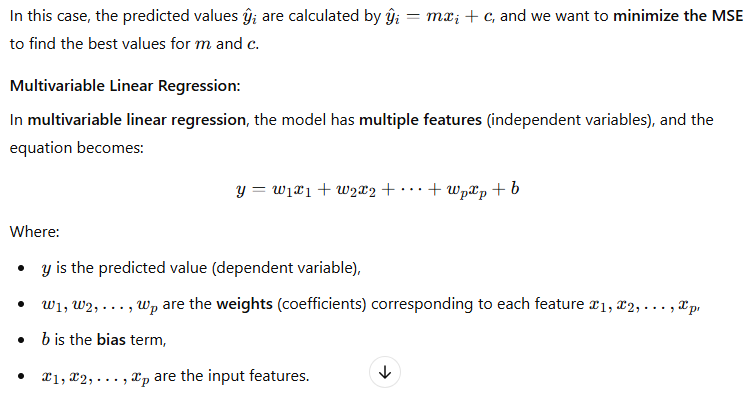
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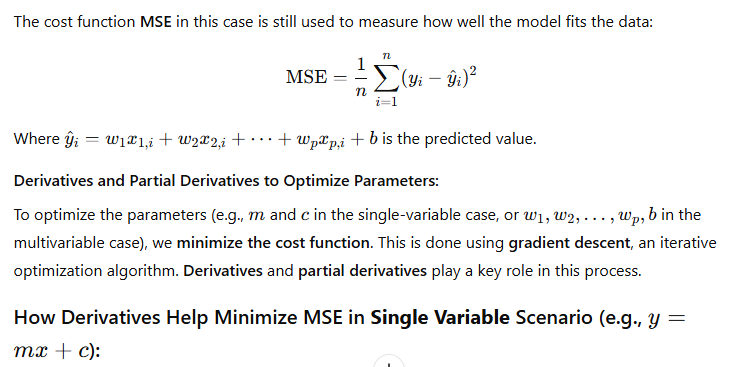
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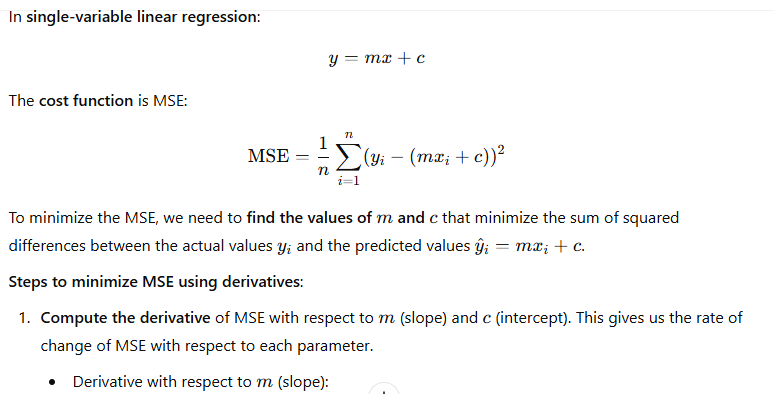
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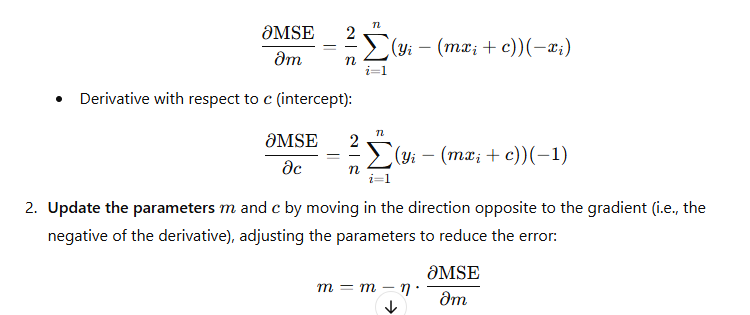


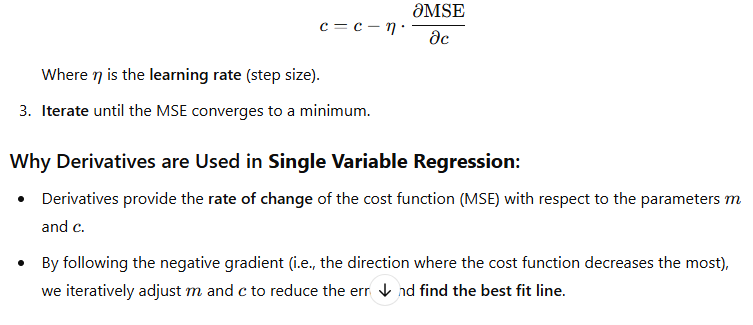


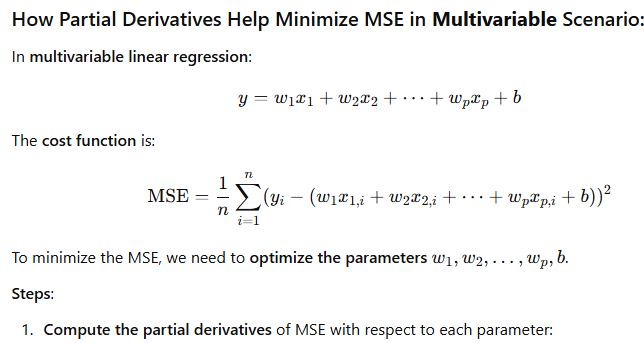


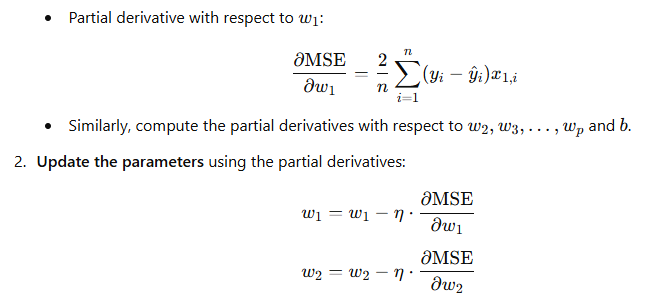


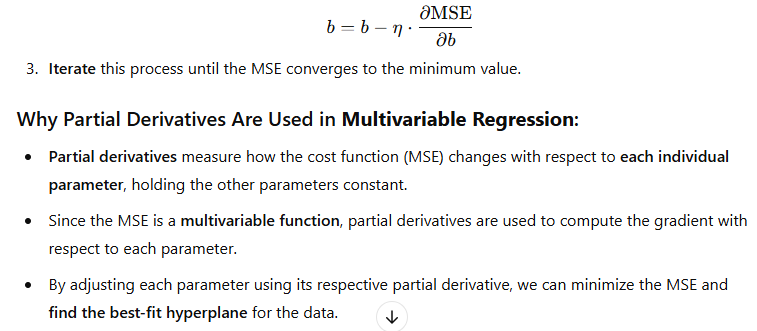












**Conclusion:**

Both derivatives and partial derivatives guide the optimization process (typically using **gradient descent**) to find the parameters that result in the best fit line or hyperplane that minimizes the error (MSE).