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# **Que 1): Expected Value understanding :**

Explain Expected value of X function meaning and its practical applications.

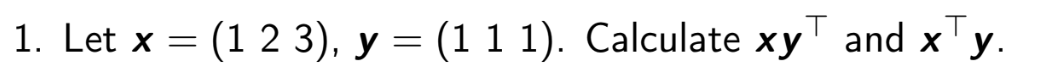
Ans:

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# **Que 2) Matrix Dot Product/Multiplication:**



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# **Que 3) Example of Expected Value Calculation i.e. E(X).**

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i.e. EV = 20 cents per game. i.e. **$0.20.**

**hence, Final answer is 500!**

# **Que 4) More 5 Example Questions on Expected Value calculations. i.e. E(X).**

A screenshot of a game

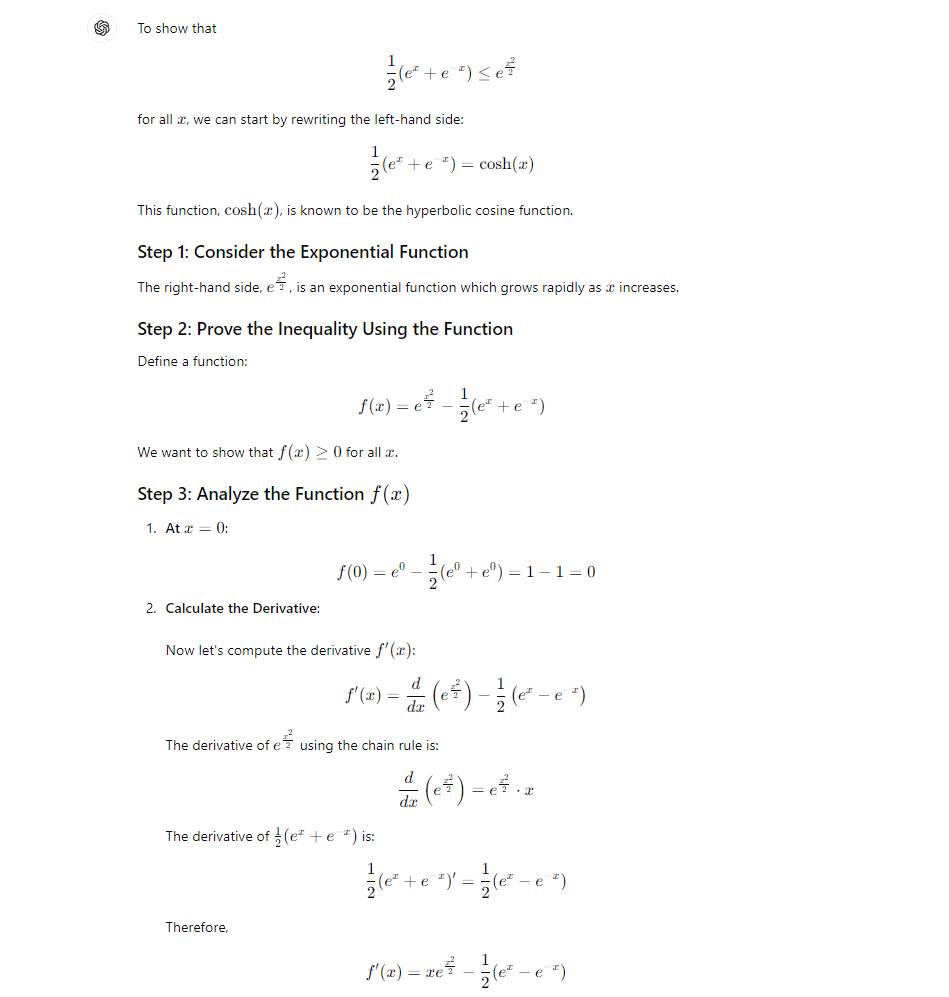
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# **Que 5) Inequality Question to Prove (Example):**

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# **Que 6) Overfitting and Train Loss and Test Loss:**

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# **Que 7) Markov’s Inequality with Example & Practical Applications.**

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# **Que 8) Variance of X. i.e. V(X) with an example**

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# **Que 9) Eigen Values and Eigen Vectors with example and practical applications:**

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# **Que 10) Dimensionality Reduction Techniques: PCA and Random Projection**

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# **Que 11) Random Projection (Dimensionality Reduction) Performance Evaluation with example.**

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# **Que 12) PCA Performance (Dimensionality Reduction) Evaluation with example of a new dataset**

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# **Que 13) More Questions (Around 13Q) on PCA.**

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# **Que 14) More Questions on basic Probability:**

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# **Que 15) Sample Movie Dataset and Performing Basic Matrix Operations:**

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# **Que 16) SVD (Singular Value Decomposition) with example and practical applications:**

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# **Que 17) Contrastive Learning, Practical Applications and other ways of lack of labels to use contrastive learning.**

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# **Que 18) Loss Function definition, with gradient computation example, Loss function’s optimization and Applications:**

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A math problem with numbers and equations

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# **Que 19) Dictionary Learning & Sparse Coding:**

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# **Que 20) low-rank matrix estimation, with applications to recommender systems Large language:**

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# **Que 21) Collaborative Recommendation System, example, evaluation techniques, loss function, advantages, disadvantages and alternatives.**

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