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questionMatrix Properties5 A colleague of yours suggests matrix addition and multiplication are similar to scalars, thus commutative, distributive and associative properties can be applied. Prove if matrix addition and multiplication are commutative and associative analytically or give counterexamples. Is matrix multiplication distributive with respect to matrix addition? Again, prove it analytically or give a counterexample. Considering three matrices A, B, C of size $n \times n$.