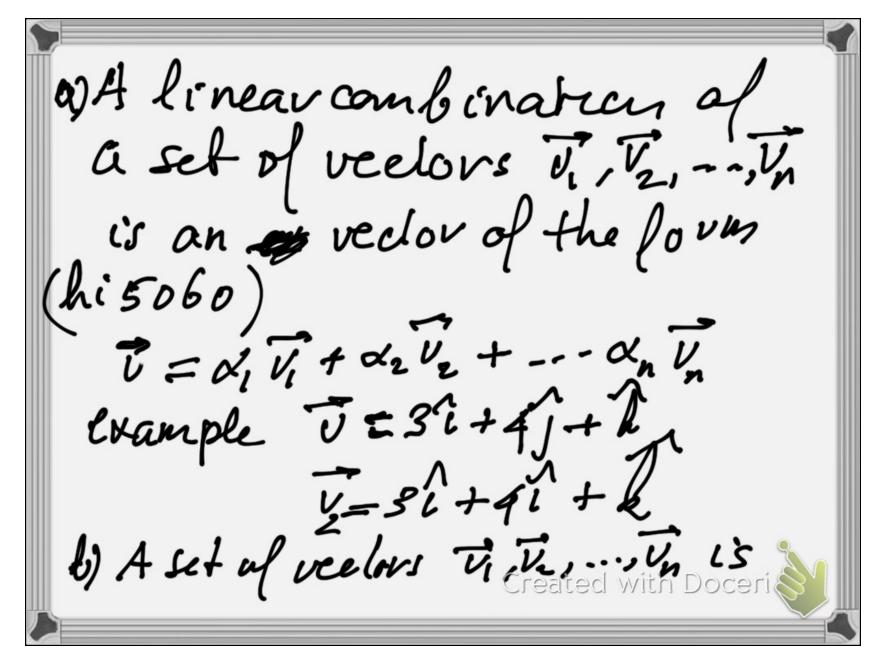
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In early dependent of none of the vectors can be expressed in terms of the other ones Example just like 7,7,12

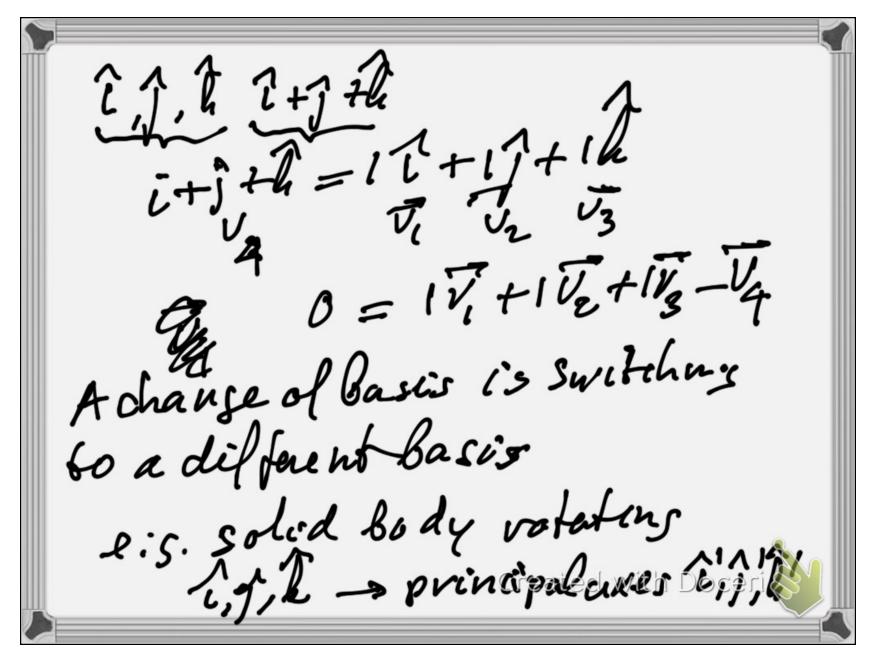
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Example linearly dependent Simplist way to check linear. (in) dependence: Try to create zero from the vectors with not all vectors
multiplied by zero - dependent

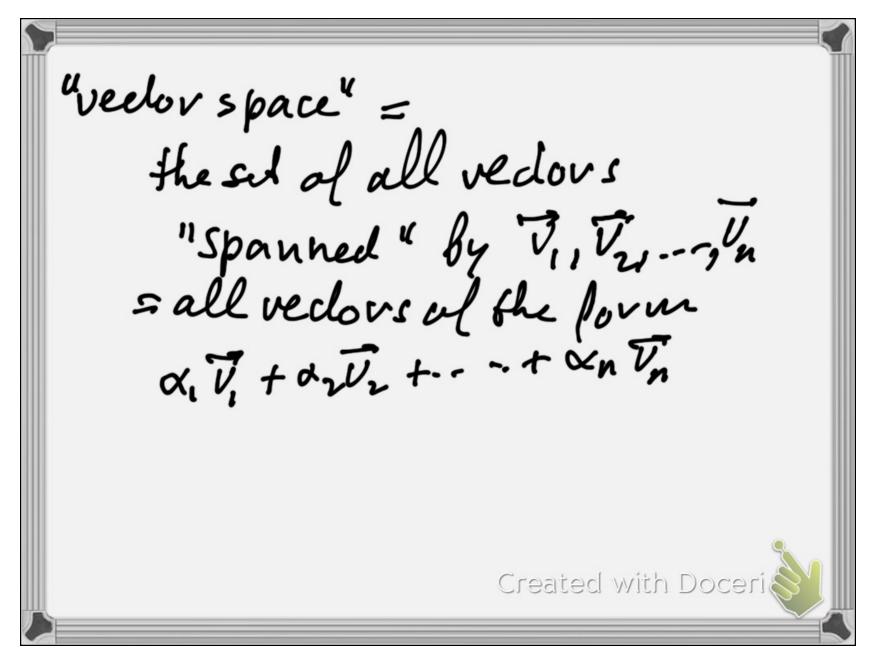
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only if $\alpha_1 = -- = -- = \alpha_n = 0$ only if $\alpha_1 = \alpha_2 = -- = - = \alpha_n = 0$ only if $\alpha_1 = \alpha_2 = -- = - = \alpha_n = 0$ otherwise linearly dependent
otherwise linearly dependent Consequence n You can have of most 3 independent vedous in 3 dimensional space

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Matrix of a system of equations

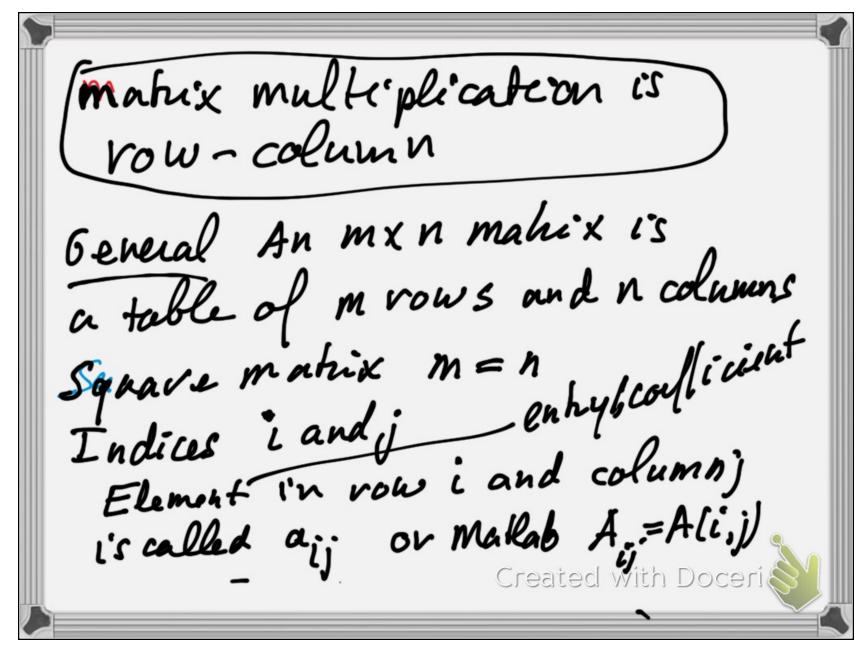
$$1X_1 + 2X_2 - X_3 + 4X_4 = 0$$
 $3X_1 - 4X_2 + 2X_3 - 6X_4 = 1$
 $X_1 - 3X_2 - 2X_3 + X_4 = 2$

Matrix notation

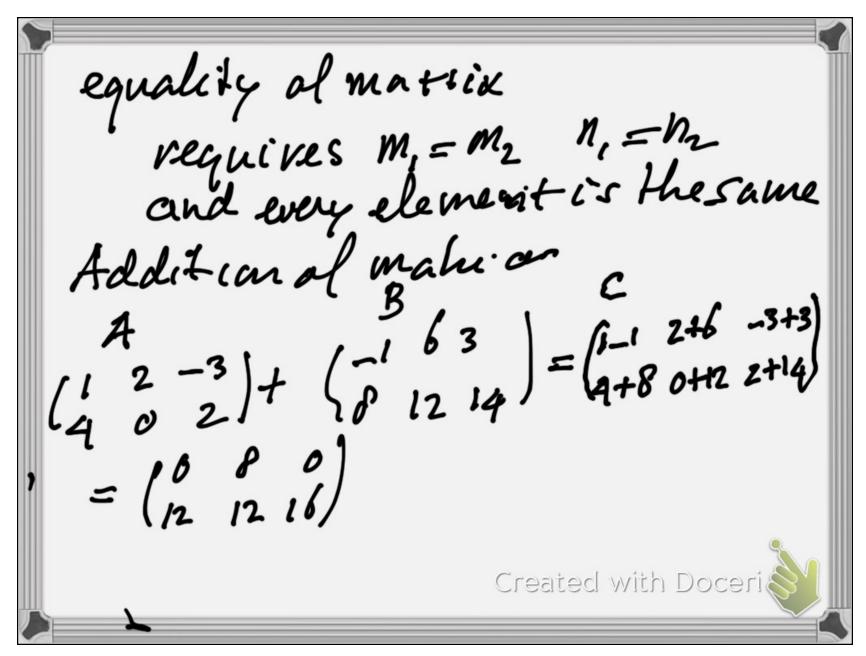
 $1 = 1 = 1 = 1 = 1$
 $1 = 2 = 1 = 1 = 1$
 $1 = 2 = 1 = 1 = 1$
 $1 = 2 = 1 = 1 = 1$

makex $1 = 2 = 1$

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Multiplication by a scalar

$$3 A = 3$$
 $3 A = 3$
 $3 A =$

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