

SA Suppose have 3 such which are L.D.

Then

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$$\boxed{\begin{array}{l} Ax=0 \\ \text{Assume} \\ \mu x + \lambda v = 0 \end{array}}$$

$$\begin{pmatrix} 1 \\ s-v_3 \\ (s-v_3)^2-1 \end{pmatrix} = \lambda \begin{pmatrix} 1 \\ s-v_1 \\ (s-v_1)^2-1 \end{pmatrix} + \mu \begin{pmatrix} 1 \\ s-v_2 \\ (s-v)^2-1 \end{pmatrix}$$

$\lambda = (1-\mu)$

$$1 = \lambda + \mu$$

$$s-v_3 = \lambda(s-v_1) + \mu(s-v_2)$$

$$\left(\lambda(s-v_1) + \mu(s-v_2) \right)^2 - 1 = \lambda(s-v_1)^2 - 1 + \mu(s-v_2)^2 - 1$$

$$\Rightarrow s-v_3 = (1-\mu)(s-v_1) + \mu(s-v_2)$$

$$= s + \mu v - s + \dots$$

$$= s + \mu v - (1-\mu)v_1 - \mu v_2$$

$$\Rightarrow -v_3 = \mu v_1 - v_1 - \mu v_2$$

$$\Rightarrow \mu = \frac{v_1 - v_3}{v_1 - v_2}$$