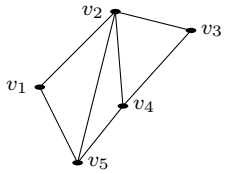
1.11 Pop quiz on Lecture 11 material

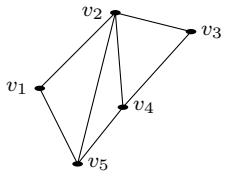
1. Find the values of $a, b \in \mathbb{Q}$ for which the system

$$\begin{array}{rcl} x - 2y + z = 4, & & \text{(a) no solution,} \\ 2x - 3y + z = 7, & \text{has} & \text{(b) a unique solution,} \\ 3x - 6y + az = b, & & \text{(c) LOTS of solutions.} \end{array}$$

2. Find the adjacency matrix of the graph



3. Find the number of paths of length 3 from vertex v_2 to vertex v_4 in the graph



4. Let $A = \begin{pmatrix} 357 & 211 \\ 426 & 152 \end{pmatrix}$. Does A^{-1} exist?

5. Let $A = \begin{pmatrix} 5 & 20 \\ 3 & 12 \end{pmatrix}$. Find A^{-1}.