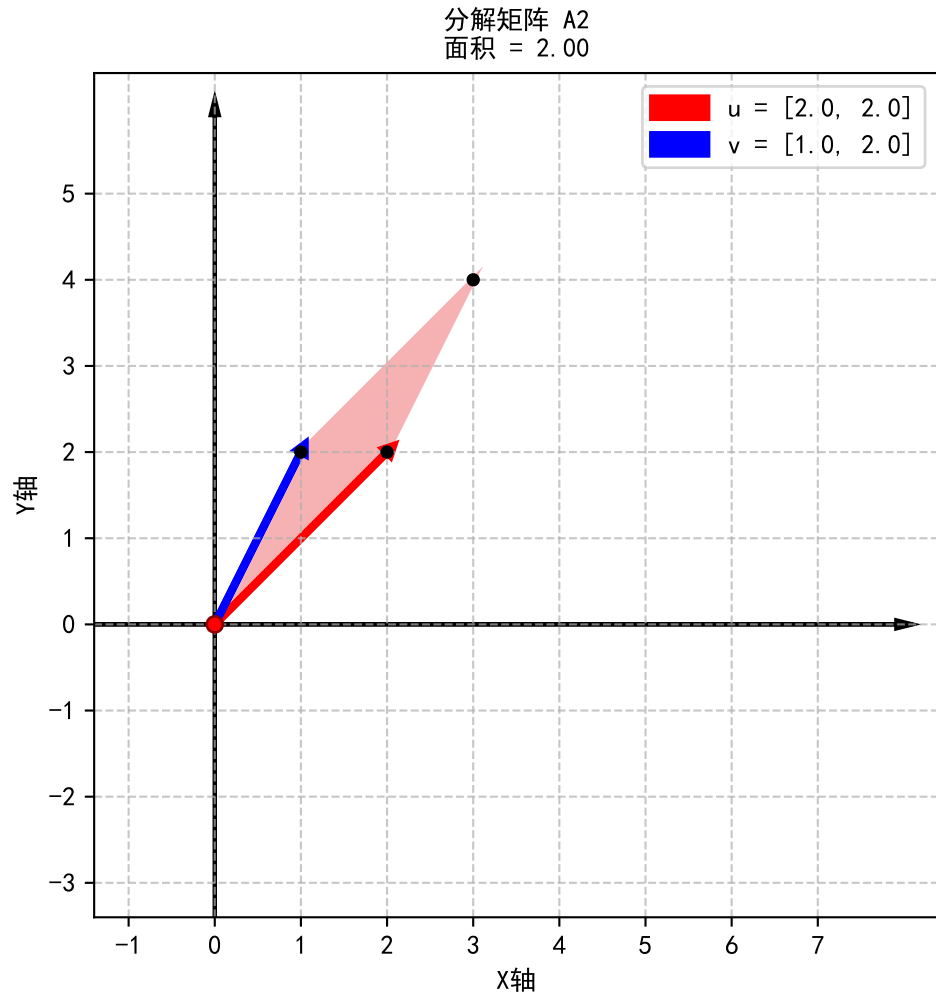
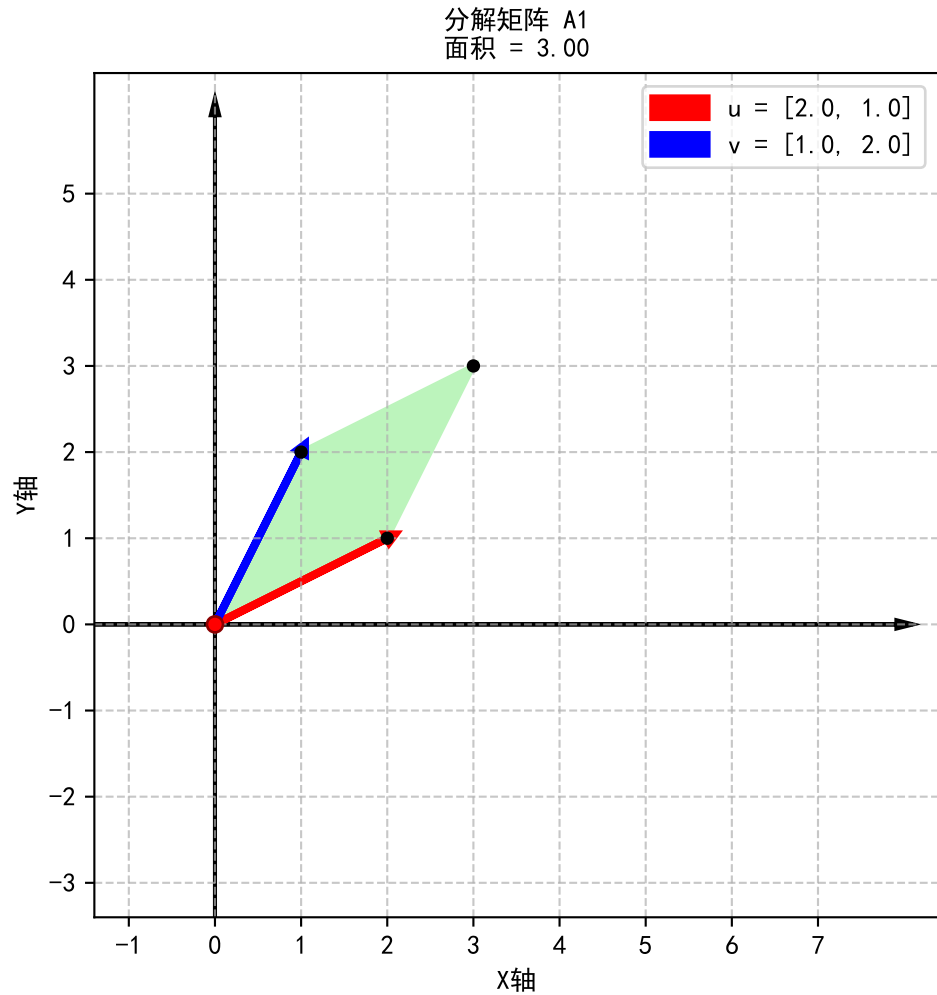
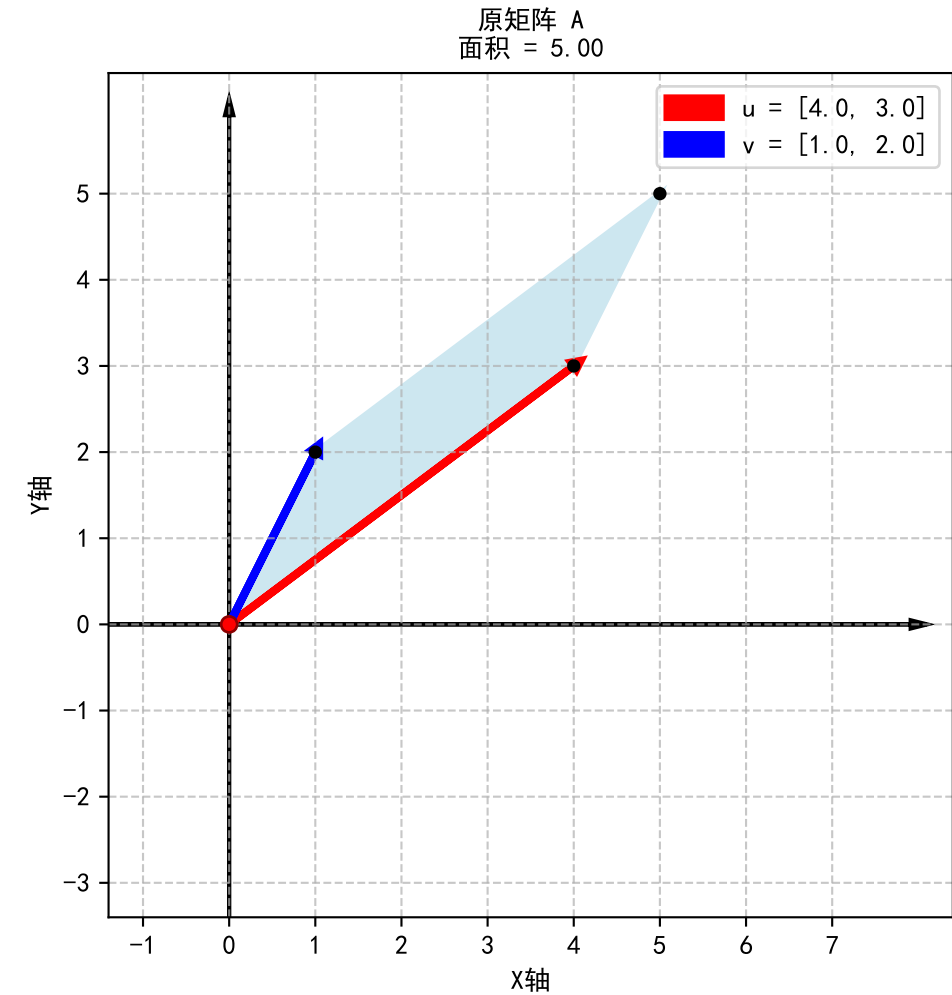




行列式某行拆项 (用行向量绘制)

原矩阵 A:

$\begin{bmatrix} 4 & 3 \\ 1 & 2 \end{bmatrix}$

第一行 $[4, 3] = [2, 1] + [2, 2]$

$\det(A) = 5.00$

分解矩阵 A1:

$\begin{bmatrix} 2 & 1 \\ 1 & 2 \end{bmatrix}$

$\det(A1) = 3.00$

分解矩阵 A2:

$\begin{bmatrix} 2 & 2 \\ 1 & 2 \end{bmatrix}$

$\det(A2) = 2.00$

验证:

$\det(A1) + \det(A2) = 5.00$

$\det(A) = 5.00$

相等: True

几何解释:

平行四边形面积具有可加性

当一边分解为两个向量之和时

总面积等于两个平行四边形面积之和

代数解释:

$\begin{aligned} \det(A) &= 4 \times 2 - 3 \times 1 \\ &= 8 - 3 \\ &= 5.00 \end{aligned}$

$\begin{aligned} \det(A1) + \det(A2) &= (2 \times 2 - 1 \times 1) \\ &\quad + (2 \times 2 - 2 \times 1) \\ &= 3.00 + 2.00 \\ &= 5.00 \end{aligned}$