



9-10  
10-11



$$\gamma - \beta \leq \alpha \quad \gamma \leq \alpha + \beta$$

$$\gamma - \alpha \geq \beta \quad \gamma \geq \alpha + \beta$$

$$r(3,3) > 5$$



Clique Ramsey Independent set  $\alpha + \beta = v$  Covering

Bip:  $|\max \text{ind}| = |\min \text{cov}|$

Bip:  $|\max M| = |\min K|$   
 $|M| \leq |K|$

Matching

$\alpha' + \beta' = v$

Edge covering