

Math 304 Test 2, May 21, 2002.

- ① To check $(\{b, x, u\}, \{d, g\})$ is a Nash equilibrium
Consider choices of player two.

$$u_2(\{b, x, u\}, \{d, g\}) = 1$$

$$u_2(\text{ " }, \{c, g\}) = 1$$

$$u_2(\text{ " }, \{d, f\}) = 0$$

$$u_2(\text{ " }, \{c, f\}) = 0.$$

There is no incentive to vary from $\{d, g\}$.

Player one.

$$u_1(\{b, x, u\}, \{d, g\}) = 4$$

$$u_1(\{b, x, v\}, \text{ " }) = 0$$

$$u_1(\{b, y, u\}, \text{ " }) = 4$$

$$u_1(\{b, y, v\}, \text{ " }) = 0.$$

$$u_1(\{a, x, * \}, \text{ " }) = 3$$

$$u_1(\{a, y, * \}, \text{ " }) = 0$$

Max is 4, so no incentive to vary from $\{b, x, u\}$.

However, on subgame starting at A, player two has an incentive to change

$$u_2(\{x\}, \{d\}) = 0 < u_2(\{x\}, \{c\}) = 4.$$

Therefore, this solution is not subgame perfect.