

STATS1 REVISION SELECTIONS AND ARRANGEMENTS (FROM OCR PAPERS)

4) i)
a)
b)

$$7! = 5040$$



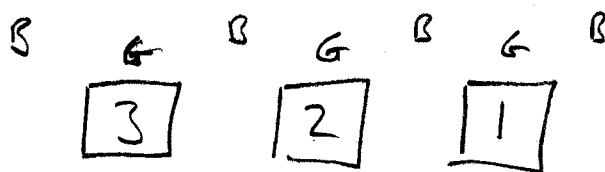
Insert \boxed{JT} or \boxed{JT} into one of the 6 spaces

Number of arrangements T and J together

$$= 5! \times 6 \times 2 = 1440$$

$$\text{Prob}(T \text{ and } J \text{ sit together}) = \frac{1440}{5040} = 0.2857$$

4) ii)
a)

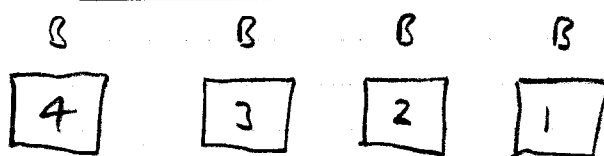


Sit girls as above and put 4 boys in the 4 spaces

$$\text{Arrangements} = 3! \times 4! = 144$$

$$\text{Prob}(\text{No 2 boys sit together}) = \frac{144}{5040} = 0.0286$$

b)



Put block of 3 girls in one of the 5 spaces.

But 3 girls can be arranged $3!$ ways

$$\text{Arrangements } 4! \times 5 \times 3! = 720 \quad P(\text{All 3 girls together}) = \frac{720}{5040}$$

$$= 0.1429$$