

STATS1 REVISION SELECTIONS AND ARRANGEMENTS (FROM OCR PAPERS)

5)

i) 1 3 3 3 5 5 9

$$7 \text{ digit numbers} = \frac{7!}{3! 2!} = 420$$

ii)

3 white 4 grey

a)

$$\begin{aligned} \text{Selections} &= 5C_3 \times 10C_4 \\ &= 10 \times 210 = 2100 \end{aligned}$$

b) Selections with 1 A white

$$= 1 \times 4C_2 \times 9C_4 = 1 \times 6 \times 126 = 756$$

A white grey

Selections with 1 A grey

$$= 1 \times 9C_3 \times 4C_3 = 1 \times 84 \times 4 = 336$$

A grey white

Total with 1A = 1092

$$\text{Prob (exactly 1A)} = \frac{1092}{2100} = 0.52$$

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