12. There are some yellow and purple blocks in a toddlers toy bin.
The probability of getting a yellow block, if you take a block at random out of the bin, is $\frac{2}{5}$.

(i) What is the probability the block will be purple?

(ii) Karl takes one block out of the bin.
It is yellow.
What is the smallest number of purple blocks there could be in the bin?

(iii) Karl then takes another block out of the bin and it is also yellow.
What is the smallest number of purple blocks there could be in the bin?

$P(Y) = \frac{2}{5}$

(i) $P(P) = 3/5$

(ii) Blocks are multiple of 5

$\Rightarrow$ least no. of blocks is 5
& least no. purple = 3

(iii) still 3!

15. Three coins are tossed, each toss resulting in a head (H) or a tail (T).
Make out a sample space for the possible results and write down the probability that the coins show

(i) *HHH* (ii) *HTH* in that order (iii) 2 heads and 1 tail in any order.

Total outcomes
$2 \times 2 \times 2 = 8$

H H H
H H T ✓
H T H ✓
H T T
T H T
T T H
T H H ✓
T T T

(i) $P(HHH) = \frac{1}{8}$

(ii) $P(HTH) = \frac{1}{8}$

(iii) $P(2H, 1T) = \frac{3}{8}$