

15 Quiz 2A

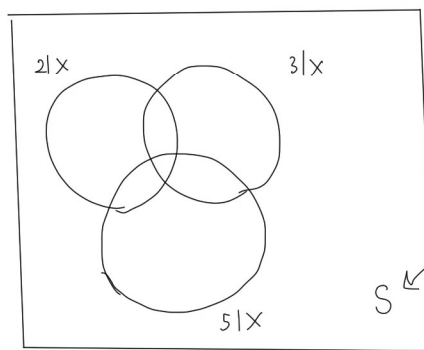
ตัวเลข 1-120 ซึ่งจำนวนที่สัมพันธ์กับ 120 เป็น 1

$$S = \{x \in \{1, \dots, 120\} \mid \gcd(x, 120) = 1\}$$

$$120 = 2 \times 2 \times 2 \times 5 \times 3$$

$$\gcd(x, 120) = 1 \iff 2 \nmid x \text{ and } 3 \nmid x \text{ and } 5 \nmid x.$$

ให้ $U = \{1, \dots, 120\}$
 $m \in U$



$$E = \{m : 2|m \text{ or } 3|m \text{ or } 5|m\}$$

$$|S| = |U| - |E|$$

$$\begin{aligned} |S| &= \boxed{120} - \boxed{60} - \boxed{40} - \boxed{24} \\ &\quad + \boxed{20} \\ &\quad + \boxed{12} \\ &\quad + \boxed{8} \\ &\quad - \boxed{4} \\ &= 32 \end{aligned}$$