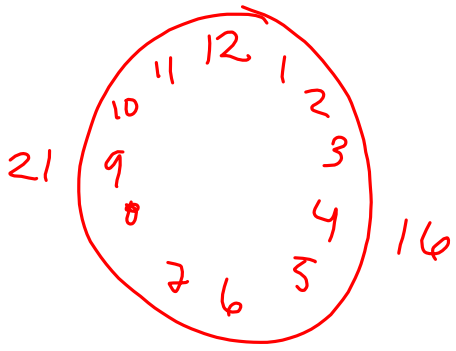
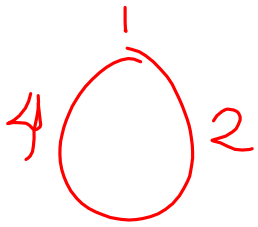


$21 \equiv 9 \pmod{12}$



$7 \equiv 3 \pmod{4}$

$26 \equiv 2 \pmod{4}$

7

$N \equiv 2 \pmod{3}$

$2 \equiv 5 \equiv 2 \pmod{3} \equiv 17$

$0 \equiv 0 \pmod{3}$

$1 \equiv 1 \pmod{3}$

$2 \equiv 2 \pmod{3}$

$3 \equiv 0 \pmod{3}$

a group is a set w/ an operation (usually + or ·) that is closed under that operation & has an identity element & every element has an inverse in that set

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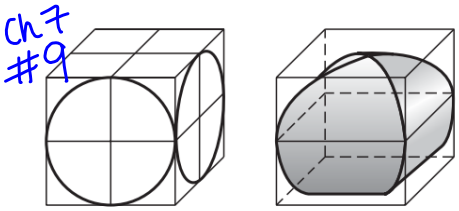
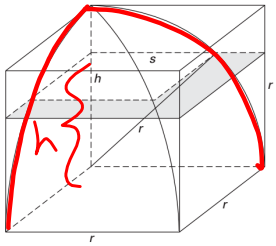
$\{0,1,2\}$ is a group under addition mod 3

$2^{-1} \equiv 1 \pmod 3$ bc $2+1 = 0 \pmod 3$

Ch 7 #9



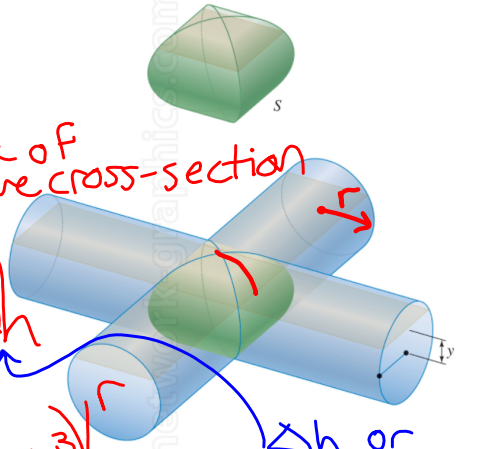


s^2 = area of square cross-section

$$V = 8\int_0^r (r^2 - h^2)\,dh$$

$$= 8\left(r^2 h - \frac{1}{3}h^3\right)\Big|_0^r$$

$$= 8r^3 - \frac{8}{3}r^3 = \boxed{\frac{16}{3}r^3}$$



$s^2 = r^2 - h^2$

$s^2 + h^2 = r^2$

$x^2 + y^2 = r^2$