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Mallory knows the value of the Chuck and Sara secret

$$\begin{aligned} K &= E^d \% N \\ &= 41^{33} \% 55 \\ &= 6 \end{aligned}$$



$$\begin{aligned} K &= E^d \% N \\ &= 76^{47} \% 91 \\ &= 6 \end{aligned}$$

$$\begin{aligned} E &= K^e \% N \\ &= 6^{23} \% 91 \\ &= 41 \end{aligned}$$





$$K = 6$$

$$E = K^e \% N$$

$$= 6^{23} \% 91$$

$$= 76$$





$$e = 23$$

$$N = 91$$

$$d = 47$$

$$e = 17$$

$$N = 55$$

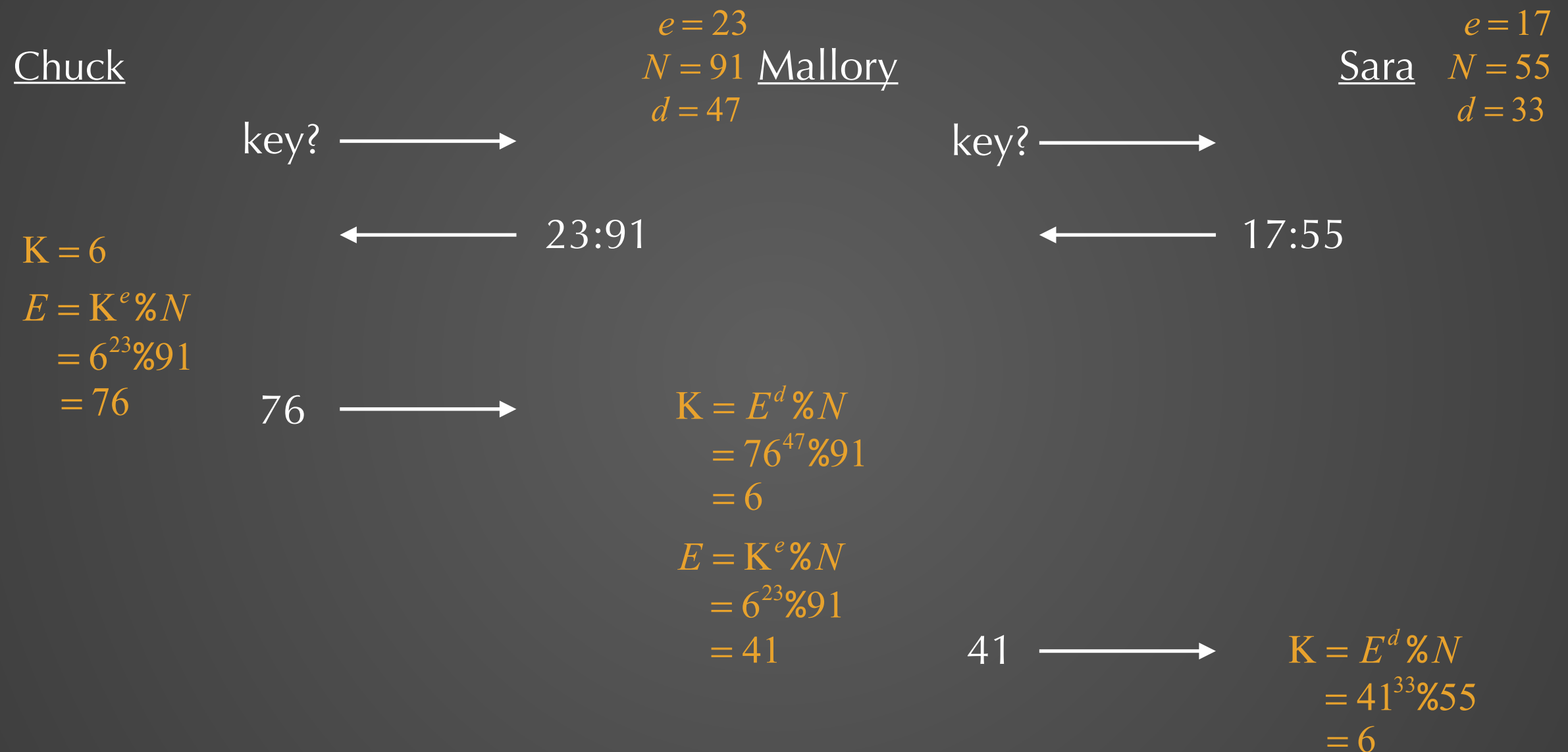
$$d = 33$$

$$p=7, q=13, N=91, e=23, d=47$$

Man-in-the-Middle

# Man-in-the-Middle

Mallory creates a key pair:  $p = 7$ ,  $q = 13$ ,  $N = 91$ ,  $e = 23$ ,  $d = 47$



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# CIA Document