

QUESTION

List those residues mod 15 which are coprime with 15. Hence write down the value of $\phi(15)$ and check it against the formula obtained in cor.5.4.

ANSWER

We must omit all multiples of 3 and 5, so the remains residues are 1,2,4,7,8,11,13,14 showing that $\phi(15) = 8$. The formula gives $\phi(15) = 15 \left(1 - \frac{1}{3}\right) \left(1 - \frac{1}{5}\right) = 15 \left(\frac{2}{3}\right) \left(\frac{4}{5}\right) = 8$, agreeing with our previously obtained value.