Complete the calculations below so that they follow Euler's Phi Function. State your answer as integers betweeen 0 and 99.

$$\varphi(360) = \left(2^{\boxed{3}} - \boxed{2}^{\boxed{2}}\right) \left(\boxed{3}^2 - \boxed{3}^{\boxed{1}}\right) \left(\boxed{5}^{\boxed{1}} - \boxed{5}^{\boxed{0}}\right) = 96$$



Complete the calculations below so that they follow Euler's Phi Function. State your answer as integers betweeen 0 and 99.

$$\varphi(504) = \left(2^{\boxed{3}} - \boxed{2}\right) \left(\boxed{3}^2 - \boxed{3}\right) \left(\boxed{7}\right) - \boxed{7}\right) = 144$$



Fill in the missing value in the expression below so that it expresses Euler's theorem. State your answer as an integer between 0 and 99.

 $13^{\,\square}\,\equiv 1\,\,(\mathrm{mod}\,\,85\,)$



Euler's Theorem can be used to calculate exponents in an efficient way. Complete the calculations below with reference to Euler's Theorem. State your answer as integers between 0 and 999.

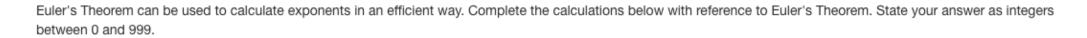
$$3^{308} \bmod 103 \ \equiv 3^{3 \cdot \boxed{102} + \boxed{2}} \equiv 9$$



Fill in the missing value in the expression below so that it expresses Euler's theorem. State your answer as an integer between 0 and 99.

$$17^{\boxed{60}} \equiv 1 \mod 61$$





$$3^{309} \bmod 103 \, \equiv 3^{3 \cdot \boxed{102} + \boxed{3}} \! \equiv \! 27$$

Fill in the missing value in the expression below such that it expresses Euler's theorem. State your answer as an integer between 0 and 99.

$$17^{30} \equiv 1 \mod 62$$

