1. In the RSA cryptosystem, $de \equiv 1 \pmod{(p-1)(q-1)}$. Thus, given p, q, and d or e, we can easily find the missing value. First, we calculate $(p-1)(q-1) = (19-1)(29-1) = 18 \times 28 = 504$. From here, we must simply calculate the modular inverse of $e = 17$ to find d. Because this is a lengthy process and we've been over it in class before (using the Extended Euclidean Algorithm), I won't elaborate on how it is found, but this inverse is 89.

2.

3.

4.