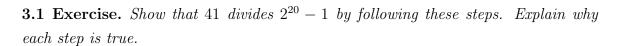
TYPE YOUR NAME HERE HW 13: 3.1-3.3 M328K March 6th, 2012



1.
$$2^5 \equiv -9 \pmod{41}$$
.

2.
$$(2^5)^4 \equiv (-9)^4 \pmod{41}$$
.

3.
$$2^{20} \equiv 81^2 \pmod{41} \equiv (-1)^2 \pmod{41}$$
.

4.
$$2^{20} - 1 \equiv 0 \pmod{41}$$
.

Solution. Type your solution here!

3.2 Question. In your head, can you find the natural number k, $0 \le k \le 11$, such that $k \equiv 37^{453} \pmod{12}$?

Solution. Type your solution here!

3.3 Question. In your head or using paper and pencil, but no calculator, can you find the natural number k, $0 \le k \le 6$, such that $2^{50} \equiv k \pmod{7}$.

Solution. Type your solution here!