Homework for Discrete Math Feb 20 and 21.

HW Feb 20:

Solve for x in the given mod:

1. $5x = 9 \pmod{11}$

2. $3x = 2 \pmod{7}$

3. $8x = 7 \pmod{11}$

Evaluate the exponents in the given mod system (write the answer in simplified form)

4. $7^{23} \pmod{31}$

5. $5^{13} \pmod{31}$

6. $12^{24} \pmod{41}$

7. $10^{15} \pmod{41}$

HW Feb 21:

1. Prove that congruence mod 5 is an equivalence relation

2. Prove that congruence mod n is an equivalence relation.

3.1 # 39, 40

3.3 # 1, 2, 23, 24