Modular Arithmetic Homework Problems

1. Explain why the numbers -7 and 28 are equivalent modulo 5.

2. Draw a number line and on it show four different numbers that are equivalent to -4 modulo 11.

3. Calculate $(81 \cdot 13) \bmod 10$.

4. Calculate $(14 + 3 \cdot 26) \bmod 3$. Remember order of operations, multiplication before addition!

5. How old are you mod 8?

6. Find one possible value of x if $(17 + x) \bmod 4 = 0$.

7. Find the smallest positive **integer** x such that $34 + 3x \bmod 7 = 1$.

8. Find two different values for n that make the following statement true: $58 \bmod n = 6$.

9. If today is Friday, then what day of the week will it be in 779 days?