Instructions: Watch the videos and complete the exercises below. Be sure to show all of your work and write in complete sentences where appropriate.

1. Using the definition of divisibility, decide whether the following statements are true or false. Justify your answer.

   (a) $6 \mid 36$

   (b) $0 \mid 12$

   (c) $-4 \mid 45$

   (d) $-3 \mid -99$

   (e) $10 \mid 0$

2. Determine at least 5 different integers that are congruent to 3 modulo 7.

3. Reduce the following numbers modulo 6:

   (a) 37

   (b) −15

   (c) 627

4. Let $a \equiv 1 \pmod 3$ and $b \equiv 2 \pmod 3$. Prove that $a + b \equiv 0 \pmod 3$.