4.1 Divisibility and Modular Arithmetic

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Evaluate these quantities.

   a) $13 \mod 3$

   b) $-97 \mod 11$

   c) $155 \mod 19$

   d) $-221 \mod 23$

4.1 pg 244 # 13

Suppose that a and b are integers, $a \equiv 4 \pmod{13}$, and $b \equiv 9 \pmod{13}$. Find the integers c with $0 \le c \le 12$ such that

   a) $c \equiv 9a \pmod{13}$.

   b) $c \equiv 11b \pmod{13}$.

   c) $c \equiv a + b \pmod{13}$.

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Decide whether each of these integers is congruent to 5 modulo 17.

   a) 80

   b) 103

   c) -29

   d) -122