Lista 6 - Aritmética Modular II

Matemática Discreta I

Novembro 2022

1. (a) $U(3) = \{\bar{1}, \bar{2}\}$
   (b) $U(4) = \{\bar{1}, \bar{3}\}$
   (c) $U(6) = \{\bar{1}, \bar{5}\}$
   (d) $U(8) = \{\bar{1}, \bar{3}, \bar{5}, \bar{7}\}$
   (e) $U(11) = \{\bar{1}, \bar{2}, \bar{3}, \bar{4}, \bar{5}, \bar{6}, \bar{7}, \bar{8}, \bar{9}, \bar{10}\}$

2. (a) $\bar{2}.\bar{2} = \bar{1}$
   (b) $\bar{3}.\bar{3} = \bar{1}$
   (c) $\bar{5}.\bar{5} = \bar{1}$
   (d) $\bar{3}.\bar{3} = \bar{1}, \bar{5}.\bar{5} = \bar{1}, \bar{7}.\bar{7} = \bar{1}$.
   (e) $\bar{2}.\bar{6} = \bar{1}, \bar{3}.\bar{4} = \bar{1}, \bar{5}.\bar{9} = \bar{1}, \bar{7}.\bar{8} = \bar{1}, \bar{10}.\bar{10} = \bar{1}$

3. (a) $\bar{2}$
   (b) não tem
   (c) não tem
   (d) não tem
   (e) $\bar{2}, \bar{6}, \bar{7}, \bar{8}$

4. (a) $x \equiv 1 \ (\text{mod } 3)$
   (b) $x \equiv 5 \ (\text{mod } 6)$
   (c) $x \equiv 1 \ (\text{mod } 4)$
   (d) $x \equiv 4 \ (\text{mod } 7)$
   (e) $x \equiv 4 \ (\text{mod } 15)$

5. (a) $\phi(125) = 100$
   (b) $\phi(16200) = 4320$
   (c) $\phi(10!) = 2^{11}.3^4.5$