Tarea 4

1. Residuo Mínimo

- r mod 10

* 17 mod 10
$1 < 17/10 < 2$
$r = 17 - (1)10$
$r = 7$

* 50 mod 10
$5 \leq 50/10 < 6$
$r = 50 - (5)10$
$r = 0$

* 6 mod 10
$0 < 6/10 < 1$
$r = 6 - (0)10$
$r = 6$

* -1 mod 10
$-1 < -1/10 < 0$
$r = -1 - (-1)10$
$r = 9$

* -38 mod 10
$-4 < -38/10 < -3$
$r = -38 - (-4)10$
$r = 2$

- r mod 3

* 17 mod 3
$5 < 17/3 < 6$
$r = 17 - (5)3$
$r = 2$

* 9 mod 3
$3 \leq 9/3 < 4$
$r = 9 - (3)(3)$
$r = 0$

* -2 mod 3
$-1 \leq -2/3 < 0$
$r = -2 - (-1)3$
$r = 1$

* -10 mod 3
$-4 < -10/3 < -3$
$r = -10 - (-4)3$
$r = 2$

* 3 mod 3
$1 \leq 3/3 < 2$
$r = 3 - (1)3$
$r = 0$

- ¿Qué día será en 1000 días, siendo hoy Jueves?

$n = 7$, día de la semana

$d = 1000 + 4 = 1004$

↓

Jueves

$1004 \mod 7 \equiv (700 + 280 + 24) \% 7$

$\equiv 24 \mod 7$

$r = 3$ (3 día de la semana)

Será Miércoles

2. Aritmética Modular

- Hallar el mínimo residuo mod(6)

* $7+3 \bmod 6$

$10 \bmod 6$

$r = 4$

* $7-3 \bmod 6$

$4 \bmod 6$

$r = 4$

* $23 - 24 \bmod 6$

$-1 \bmod 6$

$r = 5$

* $67 + 68 \bmod 6$

$(67+68) \equiv (7+8) \bmod 6$

$\equiv 15 \bmod 6$

$r = 3$

* $601 - 600 \bmod 6$

$\equiv 1 - 1 \bmod 6$

$\equiv 0 \bmod 6$

$r = 0$

* $-3 - 14 \bmod 6$

$-22 \bmod 6$

$r = 2$

• mod (10)

* $6+4 \bmod 10$
  $10 \bmod 10$

  $r = 0$

* $-21-17 \bmod 10$
  $\equiv 9+3 \bmod 10$
  $\equiv 12 \bmod 10$

  $r = 2$

* $14-7 \bmod 10$
  $\equiv 7 \bmod 10$

  $r = 7$

* $101+11+1 \bmod 10$
  $\equiv 1+1+1 \bmod 10$
  $\equiv 3 \bmod 10$

  $r = 3$

* $13-15 \bmod 10$
  $\equiv 3-5 \bmod 10$
  $\equiv -2 \bmod 10$

  $r = 8$

* $101-11-1 \bmod 10$
  $\equiv 1-1-1 \bmod 10$
  $\equiv -1 \bmod 10$

  $r = 9$