P231

39:

a): become double;

b): increase 1;

P245

41:

Suppose that a > b. Because a ≡ b(mod m), there exists a integer calling c, making a = b + m\*s. So a - b = s\*m.

Because (a^k - b^k) = (a - b)(a^k-1 + a^k-2\*b + a^k + 3\*b^2 + … + b^k-1), we can find that (a^k – b^k) can be equal to n\*m(n is a integer). So a^k ≡ b^k (mod m)

P255-256

25: 不太会

31:

Suppose a = (an-1an-2…a1a0)10 = an-1\*10^n-1 + an-2\*10^n-2 + … +a1\*10^1 + a0\*10^0

Because 10^i ≡ 1(mod 3), so if(an-1 + an-2 + … +a1 +a0) | 3, then (an-1an-2…a1a0)10 | 3