$a = 12$
$b = 8$ adiv $= 1, 2, 3, \underline{4}, 6, 12$ bdiv $= 1, 2, \underline{4}, 8$

$\gcd(a,b) = 4$

$a = 11$, $b = 17$ both prime $\gcd = 1$

if a, b have $\gcd(a,b) = 1$ than a and b are coprime

a = prime
$b \geq a$ because it could be a bigger prime but it could also be a multiple of the prime

$x - 3 \equiv 4 \bmod 17$

$x = \underline{4 \bmod 17}$
3

$1^2 = 1$ | Mod 29 = 1

$2^2 = 4$ | mod 29 = 4

$3^2 = 9$ | mod 29 = 9

$4^2 = 16$ | mod 29 = 16

$5^2 = 25$ | mod 29 = 25

$6^2 = 36$ | mod 29 = 1r7

$7^2 = 49$ | mod 29 = 1r20

$8^2 = 64$ | mod 29 = 2r6

$9^2 = 81$ | mod 29 = 2r23

$10^2 = 100$ | mod 29 = 3r13

$11 = 121$ | mod 29 = 4r5

$12^2 = 144$ | mod 29 = 4r28

$13^2 = 169$ | mod 29 = 5r24

$14^2 = 196$ | mod 29 = 6r22

$15^2 = 225$ | mod 29 = 7r22

$16^2 = 256$ | mod 29 = 8r24

$17^2 = 289$ | mod 29 = 9r28

$18^2 = 324$ | mod 29 = 11r5

$19^2 = 361$ | mod 29 = 12r13

$20^2 = 400$ | mod 29 = 13r23

$21^2 = 441$ | mod 29 = 15r6

$22^2 = 484$ | mod 29 = 16r20

$23^2 = 529$ | mod 29 = 18r7

$24^2 = 576$ | mod 29 = 19r25

$25^2 = 625$ | mod 29 = 21r16

$26^2 = 676$ | mod 29 = 23r9

$27^2 = 729$ | mod 29 = 25r4

$28^2 = 784$ | mod 29 = 27r1

$p \equiv 3 \mod 4$

$\sqrt{a} \equiv a^{(p+1)/4} \mod p$ | = quadratic residue

$-\sqrt{a} \equiv p - a^{(p+1)/4} \mod p$

$\left(\frac{a^3}{p}\right)$