Initial Table

index	0	1	2	3	4	5	6	7	8	9	10
	0	0	0	0	0	5	0	0	0	0	0

Size = 11

hash(x) = x % table size

Quadratic Probing $f(i) = i^2$

$\therefore h_i(x) = (\text{hash}(x) + i^2) \% 11$ [Remember (a mod n) mod n = a mod n]

Add 16

$h_0(16) = (16 \% 11 + 0) \% 11$

$= 5$ collision !

$h_1(16) = (16 \% 11 + 1) \% 11$

$= 6$ Valid !

	0	1	2	3	4	5	6	7	8	9	10
	0	0	0	0	0	5	16	0	0	0	0

Add 27

$h_0(27) = (27 \% 11 + 0) \% 11$

$= 5$ collision !

$h_1(27) = (27 \% 11 + 1) \% 11$

$= 6$ collision !

$h_2(27) = (27 \% 11 + 2^2) \% 11$

$= (5 + 4) \% 11$

$= 9$ valid !

	0	1	2	3	4	5	6	7	8	9	10
	0	0	0	0	0	5	16	0	0	27	0

Add 38

$h_0(38) = 38 \% 11$

$= 5$ collision !

$h_1(38) = (38 \% 11 + 1) \% 11$

$= 6$ collision !

$h_2(38) = (38 \% 11 + 2^2) \% 11$

$= 9$ collision !

$h_3(38) = (38 \% 11 + 3^2) \% 11$

$= (5 + 9) \% 11$

$= 3$ Valid !

	0	1	2	3	4	5	6	7	8	9	10
	0	0	0	38	0	5	16	0	0	27	0

Delete 16

	0	1	2	3	4	5	6	7	8	9	10
	0	0	0	38	0	5	D	0	0	27	0

Add 2

$h_0(2) = 2 \% 11$

$= 2$

	0	1	2	3	4	5	6	7	8	9	10
	0	0	2	38	0	5	D	0	0	27	0

Add 13

$h_0(13) = 13 \% 11$

$= 2$ collision !

$h_1(13) = (13 \% 11 + 1^2) \% 11$

$= 3$ collision !

$h_2(13) = (13 \% 11 + 2^2) \% 11$

$= 6 \% 11$

$= 6$ collision with D !

$h_3(13) = (13 \% 11 + 3^2) \% 11$

$= (2 + 3^2) \% 11$

$= 0$ valid !

	0	1	2	3	4	5	6	7	8	9	10
	13	0	2	38	0	5	D	0	0	27	0

13	0	2	38	0	5	D	0	0	27	0

Ans