

**CBSE Class –VIII Mathematics**  
**NCERT Solutions**  
**CHAPTER - 6**  
**Squares and Square Roots (Ex. 6.2)**

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**1. Find the squares of the following numbers:**

**(i) 32    (ii) 35    (iii) 86**

**(iv) 93    (v) 71    (vi) 46**

**Ans. (i)**  $(32)^2 = (30 + 2)^2 = (30)^2 + 2 \times 30 \times 2 + (2)^2$

$$\left[ \because (a + b)^2 = a^2 + 2ab + b^2 \right]$$

$$= 900 + 120 + 4 = 1024$$

**(ii)**  $(35)^2 = (30 + 5)^2 = (30)^2 + 2 \times 30 \times 5 + (5)^2$

$$\left[ \because (a + b)^2 = a^2 + 2ab + b^2 \right]$$

$$= 900 + 300 + 25 = 1225$$

**(iii)**  $(86)^2 = (80 + 6)^2 = (80)^2 + 2 \times 80 \times 6 + (6)^2$

$$\left[ \because (a + b)^2 = a^2 + 2ab + b^2 \right]$$

$$= 6400 + 960 + 36 = 7396$$

**(iv)**  $(93)^2 = (90 + 3)^2 = (90)^2 + 2 \times 90 \times 3 + (3)^2$

$$\left[ \because (a + b)^2 = a^2 + 2ab + b^2 \right]$$

$$= 8100 + 540 + 9 = 8649$$

$$(v) (71)^2 = (70+1)^2 = (70)^2 + 2 \times 70 \times 1 + (1)^2$$

$$\left[ \because (a+b)^2 = a^2 + 2ab + b^2 \right]$$

$$= 4900 + 140 + 1 = 5041$$

$$(vi) (46)^2 = (40+6)^2 = (40)^2 + 2 \times 40 \times 6 + (6)^2$$

$$\left[ \because (a+b)^2 = a^2 + 2ab + b^2 \right]$$

$$= 1600 + 480 + 36 = 2116$$

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**2. Write a Pythagoras triplet whose one member is:**

**(i) 6    (ii) 14    (iii) 16    (iv) 18**

**Ans. (i)** There are three numbers  $2m$ ,  $m^2 - 1$  and  $m^2 + 1$  in a Pythagorean Triplet.

$$\text{Here, } 2m = 6 \Rightarrow m = \frac{6}{2} = 3$$

$$\text{Therefore, Second number } (m^2 - 1) = (3)^2 - 1 = 9 - 1 = 8$$

$$\text{Third number } m^2 + 1 = (3)^2 + 1 = 9 + 1 = 10$$

Hence, Pythagorean triplet is (6, 8, 10).

**(ii)** There are three numbers

$2m$ ,  $m^2 - 1$  and  $m^2 + 1$  in a Pythagorean Triplet.

$$\text{Here, } 2m = 14 \Rightarrow m = \frac{14}{2} = 7$$

$$\text{Therefore, Second number } (m^2 - 1) = (7)^2 - 1 = 49 - 1 = 48$$

Third number  $m^2 + 1 = (7)^2 + 1 = 49 + 1 = 50$

Hence, Pythagorean triplet is (14, 48, 50).

**(iii)** There are three numbers  $2m, m^2 - 1$  and  $m^2 + 1$  in a Pythagorean Triplet.

Here,  $2m = 16 \Rightarrow m = \frac{16}{2} = 8$

Therefore, Second number  $(m^2 - 1) = (8)^2 - 1 = 64 - 1 = 63$

Third number  $m^2 + 1 = (8)^2 + 1 = 64 + 1 = 65$

Hence, Pythagorean triplet is (16, 63, 65).

**(iv)** There are three numbers  $2m, m^2 - 1$  and  $m^2 + 1$  in a Pythagorean Triplet.

Here,  $2m = 18 \Rightarrow m = \frac{18}{2} = 9$

Therefore, Second number  $(m^2 - 1) = (9)^2 - 1 = 81 - 1 = 80$

Third number  $m^2 + 1 = (9)^2 + 1 = 81 + 1 = 82$

Hence, Pythagorean triplet is (18, 80, 82).