

Project

on

Math

Teacher's Signature :

Bhagalpur

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Annex II

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PYTHAGORES

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Pythagorean Triplet

What is Pythagorean triplet with ten example?

A Pythagorean triple consists of three positive integers a, b, c such that $a^2 + b^2 = c^2$. Such a triple is commonly written (a, b, c) and a well known is a Pythagorean triplet.

Example \rightarrow [Pythagorean triplet = $2m, m^2 - 1, m^2 + 1$]

ii)

Let $2m = 6$

$m = \frac{6}{2} = 3$

I st no $\rightarrow 2m = 6$

II nd no $\rightarrow m^2 - 1$
 $= 3^2 - 1 = 9 - 1$
 $= 8$

III rd no $\rightarrow m^2 + 1$
 $= 3^2 + 1 = 9 + 1$
 $= 10$

iii) 14

Let $2m = 14$

$m = \frac{14}{2} = 7$

I st no $\rightarrow 2m = 14$

II nd no $\rightarrow m^2 - 1$
 $= 7^2 - 1 = 49 - 1$
 $= 48$

III rd no $\rightarrow m^2 + 1$
 $= 7^2 + 1 = 49 + 1$
 $= 50$

iiii)

16

Let $2m = 16$

$m = \frac{16}{2} = 8$

I st no $\rightarrow 2m = 16$

II nd no $\rightarrow m^2 - 1$
 $= 8^2 - 1 = 64 - 1$
 $= 63$

iv) 18

Let $2m = 18$

$m = \frac{18}{2} = 9$

I st no $\rightarrow 2m = 18$

II nd no $\rightarrow m^2 - 1$
 $= 9^2 - 1 = 81 - 1$
 $= 80$

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$$\begin{aligned} \text{III rd no.} &\rightarrow m^2 + 1 \\ &= 8^2 + 1 = 64 + 1 \\ &= 65 \end{aligned}$$

20

$$\begin{aligned} \text{Let } 2m &= 20 \\ m &= \frac{20}{2} = 10 \end{aligned}$$

$$\text{I st no.} \rightarrow 2m = 20$$

$$\begin{aligned} \text{II nd no.} &\rightarrow m^2 - 1 \\ &= 10^2 - 1 = 100 - 1 \\ &= 99 \end{aligned}$$

$$\begin{aligned} \text{III rd no.} &\rightarrow m^2 + 1 \\ &= 10^2 + 1 = 100 + 1 \\ &= 101 \end{aligned}$$

4

$$\begin{aligned} \text{Let } 2m &= 4 \\ m &= \frac{4}{2} = 2 \end{aligned}$$

$$\text{I st no.} \rightarrow 2m = 4$$

$$\begin{aligned} \text{II nd no.} &\rightarrow m^2 - 1 \\ &= 2^2 - 1 = 4 - 1 \\ &= 3 \end{aligned}$$

$$\begin{aligned} \text{III rd no.} &\rightarrow m^2 + 1 \\ &= 2^2 + 1 = 4 + 1 \\ &= 5 \end{aligned}$$

$$\begin{aligned} \text{III rd no.} &\rightarrow m^2 + 1 \\ &= 9^2 + 1 = 81 + 1 \\ &= 82 \end{aligned}$$

24

$$\begin{aligned} \text{Let } 2m &= 24 \\ m &= \frac{24}{2} = 12 \end{aligned}$$

$$\text{I st no.} \rightarrow 2m = 24$$

$$\begin{aligned} \text{II nd no.} &\rightarrow m^2 - 1 \\ &= 12^2 - 1 = 144 - 1 \\ &= 143 \end{aligned}$$

$$\begin{aligned} \text{III rd no.} &\rightarrow m^2 + 1 \\ &= 12^2 + 1 = 144 + 1 \\ &= 145 \end{aligned}$$

48

$$\begin{aligned} \text{Let } 2m &= 48 \\ m &= \frac{48}{2} = 24 \end{aligned}$$

$$\text{I st no.} \rightarrow 2m = 48$$

$$\begin{aligned} \text{II nd no.} &\rightarrow m^2 - 1 \\ &= 24^2 - 1 = 576 - 1 \\ &= 575 \end{aligned}$$

$$\begin{aligned} \text{III rd no.} &\rightarrow m^2 + 1 \\ &= 24^2 + 1 = 576 + 1 \\ &= 577 \end{aligned}$$

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8

Let $2m = 8$

$$m = \frac{8}{2} = 4$$

ret no $\rightarrow 2m = 8$

$$\text{I}^{\text{st}} \text{ no} \rightarrow m^2 - 1$$

$$= 4^2 - 1 = 16 - 1 = 15$$

$$\text{II}^{\text{nd}} \text{ no} \rightarrow m^2 + 1$$

$$= 4^2 + 1 = 16 + 1 = 17$$

10

Let $2m = 10$

$$m = \frac{10}{2} = 5$$

Ist no $\rightarrow 2m = 10$

$$\text{II}^{\text{nd}} \text{ no} \rightarrow m^2 - 1$$

$$= 5^2 - 1 = 25 - 1 = 24$$

$$\text{III}^{\text{rd}} \text{ no} \rightarrow m^2 + 1$$

$$= 5^2 + 1 = 25 + 1 = 26$$

Square and Square Root

$$1 \times 1 = 1^2 = 1$$

$$2 \times 2 = 2^2 = 4$$

$$3 \times 3 = 3^2 = 9$$

$$4 \times 4 = 4^2 = 16$$

$$5 \times 5 = 5^2 = 25$$

$$6 \times 6 = 6^2 = 36$$

$$7 \times 7 = 7^2 = 49$$

$$8 \times 8 = 8^2 = 64$$

$$9 \times 9 = 9^2 = 81$$

$$10 \times 10 = 10^2 = 100$$

$$11 \times 11 = 11^2 = 121$$

$$12 \times 12 = 12^2 = 144$$

$$13 \times 13 = 13^2 = 169$$

$$14 \times 14 = 14^2 = 196$$

$$15 \times 15 = 15^2 = 225$$

$$16 \times 16 = 16^2 = 256$$

$$17 \times 17 = 17^2 = 289$$

$$18 \times 18 = 18^2 = 324$$

$$19 \times 19 = 19^2 = 361$$

$$20 \times 20 = 20^2 = 400$$

$$21 \times 21 = 21^2 = 441$$

$$22 \times 22 = 22^2 = 484$$

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$23 \times 23 = 23^2 = 529$

$24 \times 24 = 24^2 = 576$

$25 \times 25 = 25^2 = 625$

$26 \times 26 = 26^2 = 676$

$27 \times 27 = 27^2 = 729$

$28 \times 28 = 28^2 = 784$

$29 \times 29 = 29^2 = 841$

$30 \times 30 = 30^2 = 900$

$31 \times 31 = 31^2 = 961$

$32 \times 32 = 32^2 = 1024$

$33 \times 33 = 33^2 = 1089$

$34 \times 34 = 34^2 = 1156$

$35 \times 35 = 35^2 = 1225$

$36 \times 36 = 36^2 = 1296$

$37 \times 37 = 37^2 = 1369$

$38 \times 38 = 38^2 = 1444$

$39 \times 39 = 39^2 = 1521$

$40 \times 40 = 40^2 = 1600$

$41 \times 41 = 41^2 = 1681$

$42 \times 42 = 42^2 = 1764$

$43 \times 43 = 43^2 = 1849$

$44 \times 44 = 44^2 = 1936$

$45 \times 45 = 45^2 = 2025$

$46 \times 46 = 46^2 = 2116$

$47 \times 47 = 47^2 = 2209$

$48 \times 48 = 48^2 = 2304$

$49 \times 49 = 49^2 = 2401$

$50 \times 50 = 50^2 = 2500$

$51 \times 51 = 51^2 = 2601$

$52 \times 52 = 52^2 = 2704$

$53 \times 53 = 53^2 = 2809$

$54 \times 54 = 54^2 = 2916$

$55 \times 55 = 55^2 = 3025$

$56 \times 56 = 56^2 = 3136$

$57 \times 57 = 57^2 = 3249$

$58 \times 58 = 58^2 = 3364$

$59 \times 59 = 59^2 = 3481$

$60 \times 60 = 60^2 = 3600$

$61 \times 61 = 61^2 = 3721$

$62 \times 62 = 62^2 = 3844$

$63 \times 63 = 63^2 = 3969$

$64 \times 64 = 64^2 = 4096$

$65 \times 65 = 65^2 = 4225$

$66 \times 66 = 66^2 = 4356$

$67 \times 67 = 67^2 = 4489$

$68 \times 68 = 68^2 = 4624$

$69 \times 69 = 69^2 = 4761$

$70 \times 70 = 70^2 = 4900$

$71 \times 71 = 71^2 = 5041$

$72 \times 72 = 72^2 = 5184$

$73 \times 73 = 73^2 = 5329$

$74 \times 74 = 74^2 = 5476$

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$75 \times 75 = 75^2 = 5625$

$76 \times 76 = 76^2 = 5776$

$77 \times 77 = 77^2 = 5929$

$78 \times 78 = 78^2 = 6084$

$79 \times 79 = 79^2 = 6241$

$80 \times 80 = 80^2 = 6400$

$81 \times 81 = 81^2 = 6561$

$82 \times 82 = 82^2 = 6724$

$83 \times 83 = 83^2 = 6889$

$84 \times 84 = 84^2 = 7056$

$85 \times 85 = 85^2 = 7225$

$86 \times 86 = 86^2 = 7396$

$87 \times 87 = 87^2 = 7569$

$87 \times 87 = 87^2 = 7569$

$88 \times 88 = 88^2 = 7744$

$89 \times 89 = 89^2 = 7921$

$90 \times 90 = 90^2 = 8100$

$91 \times 91 = 91^2 = 8281$

$92 \times 92 = 92^2 = 8464$

$93 \times 93 = 93^2 = 8649$

$94 \times 94 = 94^2 = 8836$

$95 \times 95 = 95^2 = 9025$

$96 \times 96 = 96^2 = 9216$

$97 \times 97 = 97^2 = 9409$

$98 \times 98 = 98^2 = 9604$

$99 \times 99 = 99^2 = 9801$

$100 \times 100 = 100^2 = 10000$

Cube and Cube root

$1 \times 1 \times 1 = 1^3 = 1$

$2 \times 2 \times 2 = 2^3 = 8$

$4 \times 4 \times 4 = 4^3 = 64$

$5 \times 5 \times 5 = 5^3 = 125$

$6 \times 6 \times 6 = 6^3 = 216$

$7 \times 7 \times 7 = 7^3 = 343$

$8 \times 8 \times 8 = 8^3 = 512$

$9 \times 9 \times 9 = 9^3 = 729$

$10 \times 10 \times 10 = 10^3 = 1000$

$11 \times 11 \times 11 = 11^3 = 1331$

$12 \times 12 \times 12 = 12^3 = 1728$

$13 \times 13 \times 13 = 13^3 = 2197$

$14 \times 14 \times 14 = 14^3 = 2744$

$15 \times 15 \times 15 = 15^3 = 3375$

$16 \times 16 \times 16 = 16^3 = 4096$

$17 \times 17 \times 17 = 17^3 = 4913$

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$18 \times 18 \times 18 = 18^3 = 5832$

$19 \times 19 \times 19 = 19^3 = 6859$

$20 \times 20 \times 20 = 20^3 = 8000$

$21 \times 21 \times 21 = 21^3 = 9261$

$22 \times 22 \times 22 = 22^3 = 10648$

$23 \times 23 \times 23 = 23^3 = 12167$

$24 \times 24 \times 24 = 24^3 = 13824$

$25 \times 25 \times 25 = 25^3 = 15625$

$26 \times 26 \times 26 = 26^3 = 17576$

$27 \times 27 \times 27 = 27^3 = 19683$

$28 \times 28 \times 28 = 28^3 = 21952$

$29 \times 29 \times 29 = 29^3 = 24389$

$30 \times 30 \times 30 = 30^3 = 27000$

$31 \times 31 \times 31 = 31^3 = 29791$

$32 \times 32 \times 32 = 32^3 = 32768$

$33 \times 33 \times 33 = 33^3 = 35937$

$34 \times 34 \times 34 = 34^3 = 39304$

$35 \times 35 \times 35 = 35^3 = 42875$

$36 \times 36 \times 36 = 36^3 = 46656$

$37 \times 37 \times 37 = 37^3 = 50653$

$38 \times 38 \times 38 = 38^3 = 54872$

$39 \times 39 \times 39 = 39^3 = 59319$

$40 \times 40 \times 40 = 40^3 = 64000$

$41 \times 41 \times 41 = 41^3 = 68921$

$42 \times 42 \times 42 = 42^3 = 74088$

$43 \times 43 \times 43 = 43^3 = 79507$

$44 \times 44 \times 44 = 44^3 = 85184$

$45 \times 45 \times 45 = 45^3 = 91125$

$46 \times 46 \times 46 = 46^3 = 97336$

$47 \times 47 \times 47 = 47^3 = 103823$

$48 \times 48 \times 48 = 48^3 = 110592$

$49 \times 49 \times 49 = 49^3 = 117649$

$50 \times 50 \times 50 = 50^3 = 125000$

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AK
26/06/17

MAKING QUESTION [FA-3]

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1. what is the number of sides of a triangle?

Ans: 3

2. what is the number of vertices of a triangle?

Ans: 3

3. what is the number of sides of a quadrilateral?

Ans: 4

4. what is the number of vertices of a quadrilateral?

Ans: 4

5. How many diagonals does a quadrilateral have?

Ans: 2

6. The sum of the measures of the three angles of a triangle is

Ans: 180°

7. The sum of the measures of the four angles of a quadrilateral is

Ans: 360°

8. How many diagonals does a triangle have?

Ans: 0

9. How many diagonals does a regular hexagon have?

Ans: 9

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10. The angle sum of a convex polygon with number of sides n is
Ans: $(n-2) 180^\circ$

11. What is the name of a regular polygon of 3 sides?
Ans: Equilateral triangle

12. $a^m \times a^n$ is equal to
Ans: a^{m+n}

13. $a^m \div a^n$ is equal to
Ans: a^{m-n}

14. $(a^m)^n$ is equal to
Ans: a^{mn}

15. $a^m \times b^m$ is equal to
Ans: $(ab)^m$

16. a^0 is equal to
Ans: 1

17. $\frac{a^m}{b^m}$ is equal to

Ans: $\left(\frac{a}{b}\right)^m$

18. $2 \times 2 \times 2 \times 2 \times 2$ is equal to

Ans: 25

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19. what is the name of a Regular Polygon of 6 sides?
Ans:- Regular hexagon

20. what is linear equation?
Ans:- An equation involving only linear polynomials is called a linear equation

21. what is the name of a Regular Polygon of 4 sides?
Ans:- Square

22. The Sum of the measures of the external angles of any Polygon is
Ans:- 360°

23. what is the name of a Regular Polygon of 5 sides?
Ans:- Regular Pentagon

24. what is the name of a Regular Polygon of 7 sides?
Ans:- Regular Heptagon

25. what is the name of a Regular Polygon of 8 sides?
Ans:- Regular Octagon

26. what is the name of a Regular Polygon of 9 sides?
Ans:- Nonagon

27. what is the name of a Regular Polygon of 10 sides?
Ans:- Decagon.

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28. one angle of a Parallelogram is a right angle. The name of quadrilateral is

Ans:- Rectangle

29. Two adjacent sides of a rectangle are equal. The name of the quadrilateral is

Ans:- Square

30. what is concave Polygon?

Ans:- A Polygon in which at least one angle is more than 180° is called a concave Polygon.

31. what is convex Polygon?

Ans:- A Polygon in which each angle is less than 180° is called a convex Polygon.

32. what is irregular Polygons?

Ans:- Polygon which are not regular are called irregular Polygons.

33. what is regular Polygon?

Ans:- A Polygon having all sides equal and all angles equal is called regular Polygon.

34. The two diagonals are not necessarily equal in a

Ans:- Rhombus

35. The diagonal

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