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9 NINTH MATHS SOLUTION to...

PROGRESS CHECK

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UNIT-II: REAL NUMBERS.

P.C. → 2.1. Page 61.

1. (i) $\sqrt{36}=6$; $\sqrt{\frac{50}{98}}=\sqrt{\frac{25}{49}}=\frac{5}{7}$; $\sqrt{1}=1$;

$\sqrt{1.44}=1.2$; $\sqrt[5]{32}=\sqrt[5]{2^5}=5$

$\sqrt{120}=\sqrt{4\times30}=2\sqrt{30}$ is only surd.

$\therefore \sqrt{120}$ is odd one.

(ii) $\sqrt{1.21}=1.1$ is the only rational

$\therefore \sqrt{1.21}$ is odd one.

2. No. when the surd is in the form $\sqrt[n]{a^n}$, where $n\in N$, 'a' is rational, then it is only rational number 'a'.

3. No. π is an irrational number, but it can't be a SURD as it can't express in the form of $\sqrt[n]{a}$.

P.C. → 2.2. Page 69

(i) $\sqrt{18}\times\sqrt{18}=\sqrt{18^2}=18$

$\therefore \sqrt{18}$ is a rationalising factor.

(ii) $5\sqrt{12}\times\sqrt{12}=5\sqrt{12^2}=5\times12=60$

$\therefore \sqrt{12}$ is a rationalising factor.

(iii) $\sqrt[3]{49}=\sqrt[3]{7^2}\times\sqrt{7}=\sqrt[3]{7^3}=7$.

$\therefore \sqrt{7}$ is a rationalising factor.

(iv) $\frac{1}{\sqrt{8}}=\frac{1}{2\sqrt{2}}\times\frac{1}{\sqrt{2}}=\frac{1}{2\sqrt{2^2}}=\frac{1}{2\times2}=\frac{1}{4}$

$\therefore \frac{1}{\sqrt{2}}$ is the rationalising factor.

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UNIT-III ALGEBRA

P.C. 3.1 → Page 95

1) $(x+3)$ is factor $\Rightarrow p(-3)=0$
2) $(3-x)$ is factor $\Rightarrow p(3)=0$
3) $(y-3)$ is factor $\Rightarrow p(3)=0$
4) $(-x-b)$ is factor $\Rightarrow p(-b)=0$
5) $(-x+b)$ is factor $\Rightarrow p(b)=0$

P.C. 3.2 → Page 98

1) RHS $\Rightarrow (-a-b-c)^2$
$=(-a)^2+(-b)^2+(-c)^2+2(-a)(-b)$
$+2(-b)(-c)+2(-a)(-c)$
$=a^2+b^2+c^2+2ab+2bc+2ac$
$=(a+b+c)^2 \Rightarrow$ LHS. ∴ Verified.

2) LHS $\Rightarrow (-a+b+c)^2$
$=(-a)^2+b^2+c^2+2(-a)b+2bc+2(-a)c$
$=a^2+b^2+c^2-2ab+2bc-2ac$
$=a^2+b^2+c^2+2a(-b)+2(-b)(-c)+2a(-c)$
$=(a-b-c)^2 \Rightarrow$ RHS. ∴ Verified.

3) RHS $\Rightarrow (-a+b-c)^2$
$=(-a)^2+b^2+(-c)^2+2(-a)b$
$+2b(-c)+2(-a)(-c)$
$=a^2+b^2+c^2+2a(-b)+2(-b)c+2ac$
$=(a-b+c)^2 \Rightarrow$ LHS. ∴ Verified.

4) RHS $\Rightarrow (-a-b+c)^2$
$=(-a)^2+(-b)^2+c^2+2(-a)(-b)$
$+2(-b)c+2(-a)c$
$=a^2+b^2+c^2+2ab+2b(-c)+2a(-c)$
$=(a+b-c)^2 \Rightarrow$ LHS. ∴ Verified

P.C. 3.3 → Pg.103.

(i) $(a+\frac{1}{a})^2 = a^2 + \frac{1}{a^2} + 2 \cancel{a} \times \frac{1}{\cancel{a}}$ — (1)

$(a-\frac{1}{a})^2 = a^2 + \frac{1}{a^2} - 2 \cancel{a} \times \frac{1}{\cancel{a}}$ — (2)

$\therefore (a+\frac{1}{a})^2 + (a-\frac{1}{a})^2 = 2a^2 + 2 \times \frac{1}{a^2}$

(1) + (2) $= 2(a^2 + \frac{1}{a^2}) = RHS$

(ii) $(a+\frac{1}{a})^2 - (a-\frac{1}{a^2}) = a^2 + \frac{1}{a^2} + 2 - a^2$

(1) − (2) $- \frac{1}{a^2} + 2$

$= 4$ (RHS)

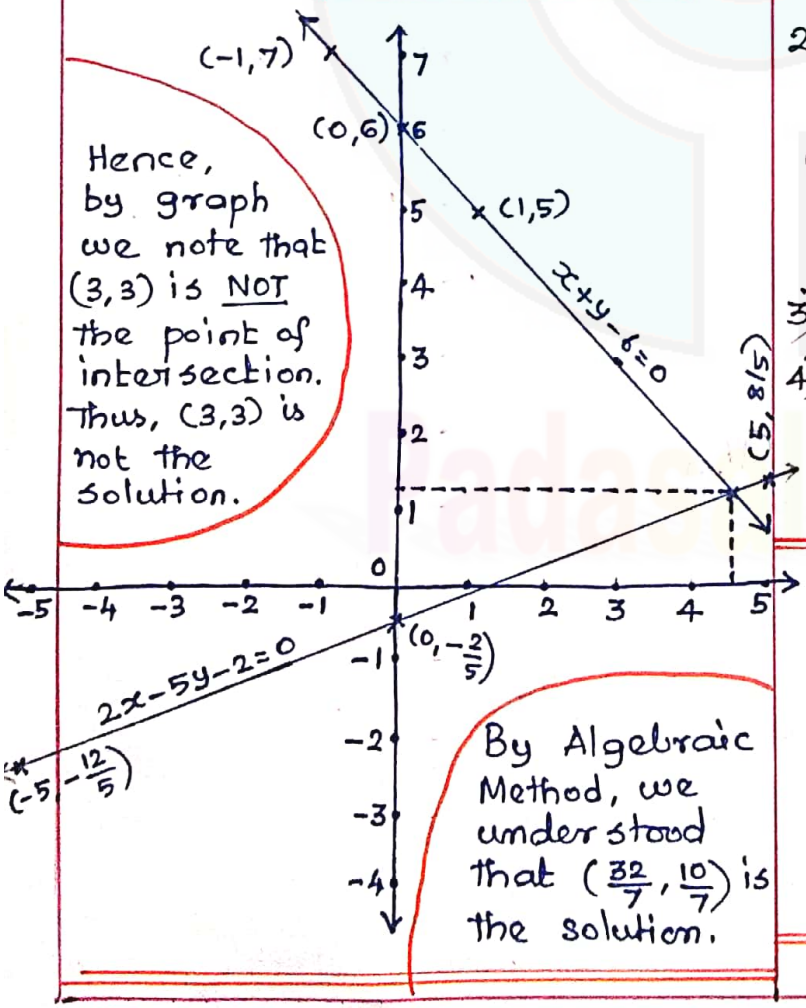
P.C. 3.4 → Pg. 121 GRAPH

$2x - 5y - 2 = 0 \Rightarrow y = \frac{2}{5}x - \frac{2}{5}$

x	−5	0	5
y	−12/5	−2/5	8/5

$x + y - 6 = 0 \Rightarrow y = -x + 6$

x	−1	0	1
y	7	6	5



Hence, by graph we note that (3,3) is NOT the point of intersection. Thus, (3,3) is not the solution.

By Algebraic Method, we understood that $(\frac{32}{7}, \frac{10}{7})$ is the solution.

UNIT-IV: GEOMETRY

P.C. 4.1. → Page-147

(i) No. If so, then it is square.
(ii) Parallelogram
(iii) No. If so, then it is square.
(iv) Rectangle
(v) rhombus.
(vi) Square
(vii) Square.

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P.C. 4.2 → Page 151

1. (i) when $l = b$, then rectangle becomes square.
(ii) when all sides are equal, then parallelogram becomes rhombus.
(iii) diagonals bisect each other at right angle.
(iv) all sides are equal and opposite sides parallel.

2 (i) Equilateral – Rhombus
(ii) Right angled – Kite
(iii) Isosceles – Rhombus [or square when sides are $a, a, \sqrt{2}a$]

3) (i), (v), (vi) are parallelogram

4) (iii), (vi), (viii) are not quadrilateral.

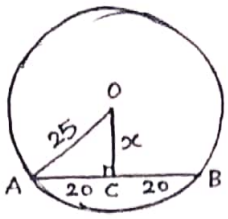
5) (i) (v) (vi) are trapeziums.
(ii) (iii) (iv) are not trapeziums

P.C. 4.3 → Pg 161

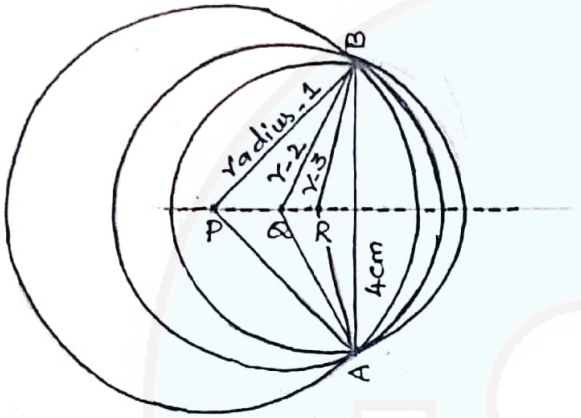
1. True
2. True
3. False
4. False
5. True
6. True
7. True
8. False
9. True
10. False.

P.C. 4.4 → Pg.164

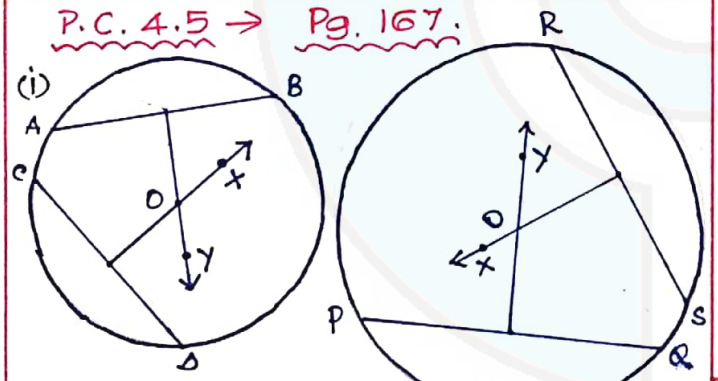
1. radius OA = 25cm.
AC = 20cm.
C: AB = 40 cm - given)
∴ By theorem,
$x^2 + 20^2 = 25^2$
$x^2 = 625 - 400 = 225 = 15^2$
∴ The distance $x = 15$ cm.



2. Three circles through PQ = 4cm.



P.C. 4.5 → Pg. 167.



Step-1: Draw the outline of bangles. construct 2 chords in each circle.

Step-2: Find midpoint of the chords. construct perpendicular bisector using set square (through midpoint)

Step-3: The point of intersection of the rays is the centre of circle.

(ii) Trace the given cresent. Using the same concept in (i), find the centre and then radius of the circle. Hence, complete the circle.

P.C→4.6. Page.172

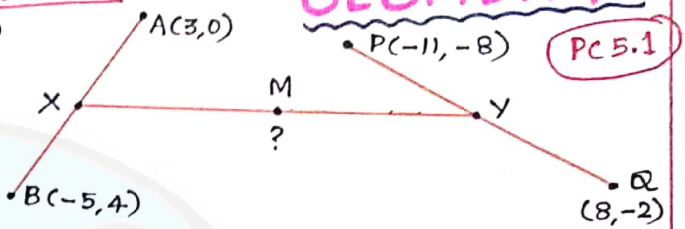
1. cyclic quadrilateral (con. Theo12)
2. increases.
3. equal. (Theorem.13)
4. supplementary (Theorem.12)

UNIT. V. **CO-ORDINATE GEOMETRY.**

PC 5.1 - 206

PC 5.1

(i)



Midpoint formula = $\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$

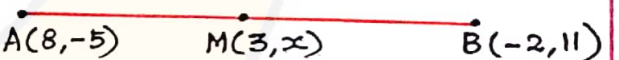
∴ Midpoint AB = X $\left(\frac{3-5}{2}, \frac{0+4}{2}\right) = (-1, 2)$

Midpoint PQ = Y $\left(\frac{-11+8}{2}, \frac{-8-2}{2}\right) = Y\left(-\frac{3}{2}, -5\right)$

∴ Midpoint XY = M $\left(\frac{-1-\frac{3}{2}}{2}, \frac{2-5}{2}\right) = \left(\frac{-5}{4}, -\frac{3}{2}\right)$

∴ Required point is $\left(-\frac{5}{4}, -\frac{3}{2}\right)$

(ii)



Midpoint AB = $\left(\frac{8-2}{2}, \frac{-5+11}{2}\right) = (3, x)$

$\Rightarrow (3, 3) = (3, x)$

Equate the co-ordinates $\Rightarrow x = 3$.

P.C. 5.2 → Pg.210

Section formula: $\left(\frac{mx_2+nx_1}{m+n}, \frac{my_2+ny_1}{m+n}\right)$

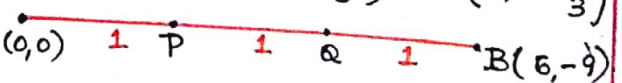
Let the point of trisection be P and Q.

(i)

$m:n = 1:2 \Rightarrow P\left(\frac{-2+8}{3}, \frac{-3-2}{3}\right) = P\left(2, -\frac{5}{3}\right)$

$m:n = 2:1 \Rightarrow Q\left(\frac{-4+4}{3}, \frac{-6-1}{3}\right) = Q\left(0, -\frac{7}{3}\right)$

(ii)



$m:n = 1:2 \Rightarrow P(2, -3)$

$m:n = 2:1 \Rightarrow Q(4, -6)$

UNIT. VIII: STATISTICS

P.C. 8.1 → Pg. 267

Primary data are first-hand original data that we collect ourshelves. Hence, the following are Primary Data.

(i) Customer surveys.
(vi) Marketing details.
(viii) Price index details.

P.C. 8.2 → Pg. 269

Class Interval	Tally Mark	Frequency
10-20	𝍸 I	6
21-30	𝍸 I	6
31-40	IIII	4
41-50	𝍸 I	6
51-60	𝍸 𝍸	10
61-70	𝍸 II	7
71-80	𝍸 I	6
81-90	II	2
90-100	III	3
	Total →	50

P.C. 8.3 → Pg. 276

New mean $\bar{x}$ = 48 - 7 = 41.

$\because$ Mean $= \frac{\Sigma x}{n} = \frac{\Sigma x}{10} = 48$.

$\therefore \Sigma x = 48 \times 10 = 480$.

Less 7 in each data $\Rightarrow \Sigma x - 7 \times 10 = 480 - 70 = 410$.

$\therefore$ New mean $= \frac{410}{10} = 41$ //.

P.C. 8.4 → Pg. 276

1. old mean $\bar{x} = 20$

$\therefore$ New mean $= 20 \times 6 = 120$.

2. old mean $\bar{x} = 16$

$\therefore$ New mean $= \frac{16}{4} = 4$.

P.C. 8.5 → Pg. 277

Let the numbers be a, b, c, d.

Given, $b+c+d = 3 \times 45 = 135$ — (1)

$a+c+d = 3 \times 60 = 180$ — (2)

$a+b+d = 3 \times 65 = 195$ — (3)

$a+b+c = 3 \times 70 = 210$ — (4).

(1) + (2) + (3) + (4) $\Rightarrow 3a+3b+3c+3d = 720$

$a+b+c+d = 720/3 = 240$.

$\therefore \bar{x} = \frac{a+b+c+d}{4} = \frac{240}{4} = 60$ //.

P.C. 8.6 → Pg. 282.

1. Median of 0, 1, 2, 3 $\Rightarrow \frac{1+2}{2} = 1.5$
2. Median of 0, 1, 2, 3, 4 $\Rightarrow$ 2.
3. Difference : 2 - 1.5 = 0.5.

UNIT- IX: PROBABILITY

P.C. 9.1. → Pg. 297

The followings cannot be an outcome of Probability:

(ii) $-\frac{1}{7}$ (iv) −0.52 (vi) 1.3 (ix) 107%.

P.C. 9.2 → Pg. 300.

The following are mutually exclusive event:

(2) Roll a dice → getting a 5. & getting an even number.

(4) Draw a card from a standard pack → → getting a picture card & getting a 5.

Sl. No. (1), (3), (5) are not mutually exclusive event.

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9 NINTH MATHS: SOLUTIONS to THINKING CORNER (E/M)

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UNIT.I: SET LANGUAGE.

T.C-1.1 Page.6 (E/M)

0 and ϕ are the elements in the set $\{0\}$ and $\{\phi\}$. Hence, it is not empty set. An empty set is denoted as $\{\}$ or ϕ.

T.C. 1.2 Page.7

Set of natural numbers contains infinite number of elements. Thus, it can't be a finite set.

T.C. - 1.3 Page.7

$\{4,2\}$, $\{x,y,z\}$ and $\{d\}$ are elements of set A.

$\therefore n(A) = 7$.

T.C. - 1.4. Page.7

Given that,

$A = \{x : x$ is a colour in national flag of India$\}$.

$\Rightarrow A = \{$Saffron, white, navy blue, Green$\}$.

$\therefore n(A) = 4$. But, $n(B) = 3$.

Hence A and B not equivalent.

T.C. - 1.5. Page-8.

Cardinal No. of ϕ is $\{\}$ is 0.
Cardinal No. of $\{0\}$ is 1
Cardinal No. of $\{\phi\}$ is 1.

Hence, the sets ϕ, $\{0\}$, $\{\phi\}$ are neither equal nor equivalent. But, $\{0\}$ and $\{\phi\}$ are equivalent.

T.C - 1.6 Page-9.

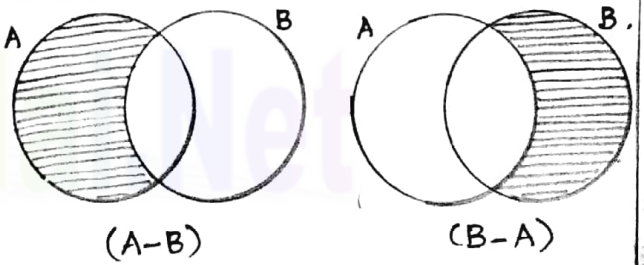
$W = \{0,1,2,\ldots\}$
$N = \{1,2,3,\ldots\}$
$Z = \{\ldots -2,-1,0,1,2,\ldots\}$
clearly W is subset of Z.

T.C. - 1.7. Page-11

By definition, when A = B, then set A is called improper subset of B. Also, there is only one possibility of equal set (A = B).

Hence, "Every set has only one improper subset".

T.C. - 1.8 Pg.17



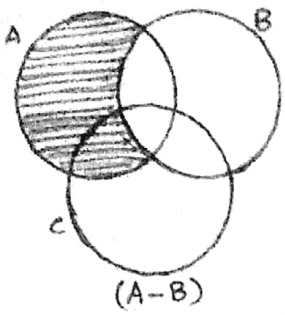
(A-B) (B-A)

Refer to venn diagram.
$(A-B) \cap (B-A) = \phi$ (Null set)

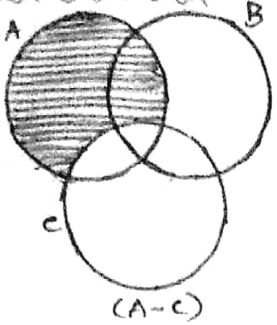
T.C → 1.9 Pg.20

P and Q disjoint sets.
$\therefore P \cap Q = \{\}$.
and $Q = \{j,m,o\}$.

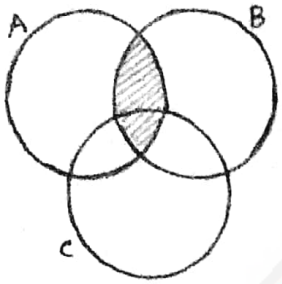
T.C. → 1.10 Page-24



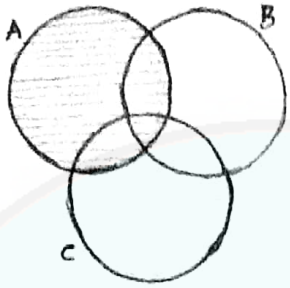
(A−B)



(A−C)



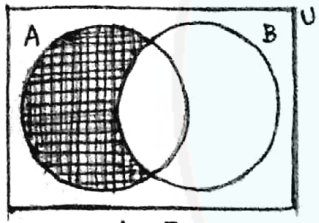
(A∩B)



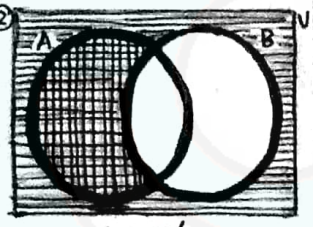
(A−B) ∪ (A−C) ∪ (A∩B)

∴ (A−B) ∪ (A−C) ∪ (A∩B) = A.

T.C. → 1.11. Page-26

① 

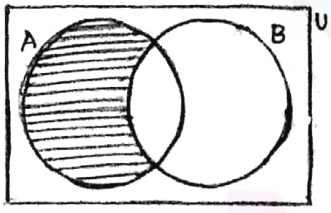
A−B

② 

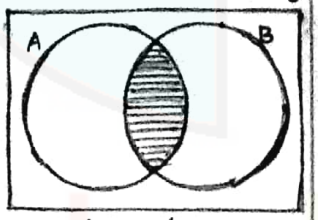
A∩B′.

① = ② Hence verified.

T.C. → 1.12. Page 26



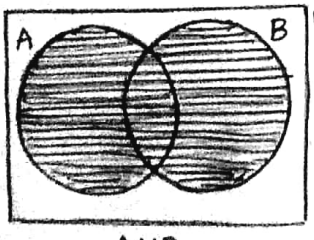
(A−B)



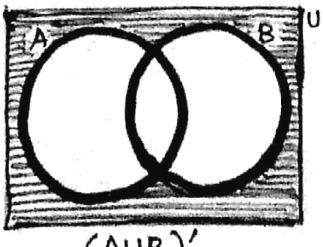
(B−A′)

∴ (A−B) ∪ (B−A′) = A.

T.C. → 1.13 Page. 27



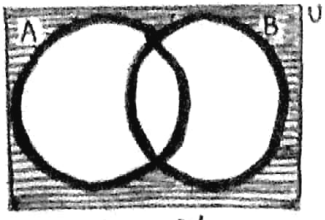
A∪B



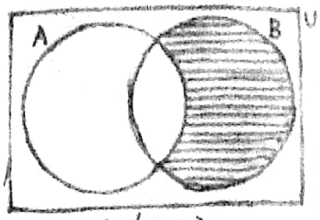
(A∪B)′

∴ A∩(A∪B)′ = ∅ (Null set)

T.C. 1.14. Page. 27.



(A∪B)′



(A′∩B)

∴ (A∪B)′ ∪ (A′∩B) = A′.

UNIT-II REAL NUMBERS

T.C→2.1 Page 58.

(4) $\sqrt{9} = \pm 3$ is false.

Proof: Let $9 = 9 \Rightarrow \sqrt{9} = \sqrt{9}$

$\Rightarrow \sqrt{3\times3} = \sqrt{-3\times-3}$

$\Rightarrow \sqrt{3^2} = \sqrt{(-3)^2}$

$\Rightarrow 3 = -3$ (Not true)

∴ $\sqrt{9}$ is equal to either 3 or −3. But, not $\sqrt{9} = \pm 3$. Moreover, This is true only when $x^2 = 9$

$\Rightarrow x = \pm 3$.

T.C. 2.2 → Page 68.

1. Yes, $\sqrt{12}$ also can be a rationalising factor of $\sqrt{3}$.
Because, $\sqrt{12}\times\sqrt{3} = \sqrt{36} = 6$ (Rational)

2. $\sqrt[7]{5^{11}}$ can be the other number to rationalise $\sqrt[7]{5^3}$.
Because, $\sqrt[7]{5^3} \times \sqrt[7]{5^{11}} = \sqrt[7]{5^{3+11}}$

$= \sqrt[7]{5^{14}} = \sqrt[7]{(5^2)^7}$

$= 5^2 = 25$ (Rational)

3. While manipulating a surd into rational number, we multiply and divide the rationalising factor. Hence, choosing the smallest among them to avoid simplification.

T.C. 2.3 → Page. 73

1) 2.88×10^2 and 9.83×10^{-3}

2) 3.8360592×10^2 and 1.355×10^2

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UNIT-III. ALGEBRA

T.C. → 3.1. Page 94

Given, a, b, x are integers. a≠0.

Also given $b = ax$

$\Rightarrow \frac{b}{a} = x$ (integer).

Hence, 'a divides b'.

T.C. → 3.2. Page 104

wkt. $a^3+b^3 = (a+b)(a^2-ab+b^2)$.

(i) $2017^3+2018^3 = (2017+2018)(2017^2-2017\times2018+2018^2)$.

$= 4035 \times (\quad\quad)$

One of the factor 4035 is divisible by 15.

$\therefore 2017^3+2018^3$ is divisible by 15.

(ii) $2018^3-1973^3 = (2018-1973)(\quad\quad)$

$= 45 \times (\quad\quad)$

45 is divisible by 15.

$\therefore 2018^3-1973^3$ is divisible by 15.

UNIT-IV. GEOMETRY.

T.C. 4.1 → Page 149

→ Nothing to workout. Only formulas. However, let us check the formulas with example.

1. consider a SQUARE which is regular polygon with 4 sides.

$\therefore n = 4$.

Sum of all interior angles =

$= (n-2)\times180 = (4-2)\times180$

$= 360^\circ$ (True).

2. Each interior angle is

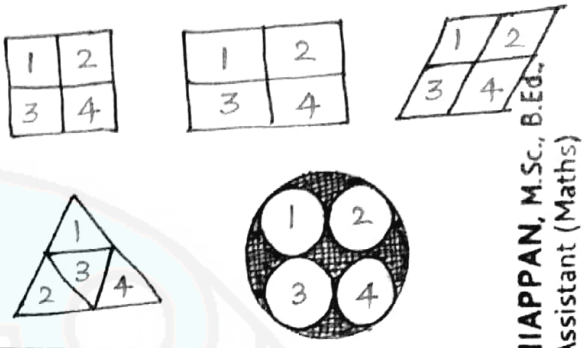
$\frac{n-2}{n} \times 180 = \frac{4-2}{4} \times 180 = 90^\circ$ (True)

→ exterior angle $\frac{360}{n} = \frac{360}{4} = 90^\circ$ (True)

→ No. of diagonals $\frac{n(n-3)}{2} = \frac{4}{2} = 2$ ✓

T.C. 4.2 → Page 161

Unlike other 2D shapes (Square, triangle etc.) area of a circle can't be divided into four equal parts to construct 4 congruent circle. Refer the figures given below:-



T.C. 4.3 → Page 161.

1. No sides in circle.
2. No. A polygon should have 3 or more than 3 sides.

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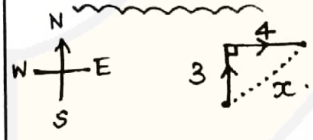
V. COORDINATE GEOMETRY.

T.C. → 5.1 Page 196

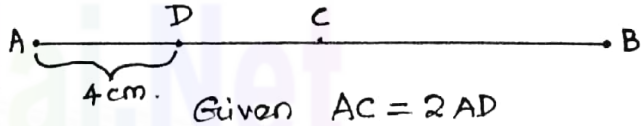


By pythagorus theorem,

$x = \sqrt{3^2+4^2} = \sqrt{25}$

$\therefore$ Distance is 5 km.

T.C. → 5.2 Page 204



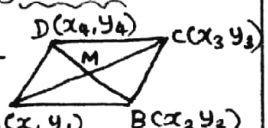
Given AC = 2AD

AB = 2AC = 4AD = 4×4

AB = 16 cm.

T.C. → 5.3 Page 206.

Diagonals of a parallelogram bisect each other. Hence.



$\left(\frac{x_1+x_3}{2}, \frac{y_1+y_3}{2}\right) = \left(\frac{x_2+x_4}{2}, \frac{y_2+y_4}{2}\right) = M.$

$\Rightarrow (x_4, y_4) = (x_1+x_3-x_2, y_1+y_3-y_2)$

$\therefore$ Vertex D = (6+9−8, 1+4−2) = D(7, 3).

T.C. → 5.4 Page 208.

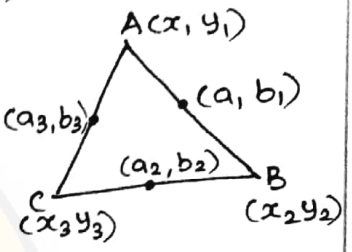
Given that the mid-points of sides of a triangle ABC is (5, 1), (3, −5) and (−5, −1).
a_1, b_1 a_2, b_2 a_3, b_3.

$\therefore (a_1+a_3-a_2,\ b_1+b_3-b_2) = (5-5-3,\ 1-1+5) = A(-3, 5)$

$(a_1+a_2-a_3,\ b_1+b_2-b_3) = (5+3+5,\ 1-5+1) = B(13, -3)$

$(a_2+a_3-a_1,\ b_2+b_3-b_1) = (3-5-5,\ -5-1-1) = C(-7, -7)$.

Now, consider a triangle ABC, with the vertices of $A(x_1, y_1)$ $B(x_2, y_2)$ and $C(x_3, y_3)$. Let midpoints (a_1, b_1) (a_2, b_2) & (a_3, b_3).



$$\therefore (a_1+a_3-a_2,\ b_1+b_3-b_2) = \left[\frac{x_1+x_2}{2}+\frac{x_1+x_3}{2}-\frac{x_2+x_3}{2},\ \frac{y_1+y_2}{2}+\frac{y_1+y_3}{2}-\frac{y_2+y_3}{2}\right]$$

$$= \left[\frac{x_1+x_2+x_1+x_3-x_2-x_3}{2},\ \frac{y_1+y_2+y_1+y_3-y_2-y_3}{2}\right]$$

$$= \left[\frac{2x_1}{2},\ \frac{2y_1}{2}\right] = (x_1, y_1) \Rightarrow \text{Vertex A.}$$

Hence, $(a_1+a_3-a_2,\ b_1+b_3-b_2)$, $(a_1+a_2-a_3,\ b_1+b_2-b_3)$ and $(a_2+a_3-a_1,\ b_2+b_3-b_1)$ is the formula to find vertex of a triangle when midpoints are given.

T.C. 5.5. Page 211

(i) Let us apply m=n=1 in section formula: $\left(\frac{mx_2+nx_1}{m+n},\ \frac{my_2+ny_1}{m+n}\right)$

$= \left(\frac{x_2+x_1}{1+1},\ \frac{y_2+y_1}{1+1}\right) = \left(\frac{x_1+x_2}{2},\ \frac{y_1+y_2}{2}\right)$

∴ Result in mid-point formula.

(ii) A —1— P —1— Q —1— B

From figure, AP = PQ = QB = 1 (Equal)

∴ AP : AB = 1 : 3 [AB = AP + PQ + QB]

AQ : AB = 2 : 3 [AQ = AP + PQ]

T.C. 5.6. Page 217

(i) We should find the centroid of the triangle, to balance the plate on the stick.

$\therefore G\left(\frac{5+2+8}{3},\ \frac{8+4+3}{3}\right) = G\left(\frac{15}{3}, \frac{15}{3}\right) = G(5, 5)$

(ii) Centroid of a triangle is the point at which its overall mass is focused. Hence its centre of gravity.

UNIT. VI TRIGONOMETRY

T.C. 6.1. Page 224

We can apply pythogarus theorem to verify whether a triangle is right triangle

$\Delta ABC \Rightarrow (3,4,5) \Rightarrow 3^2+4^2 = 25 = 5^2$ (True)

$\Delta DEF \Rightarrow (6,8,10) \Rightarrow 6^2+8^2 = 100 = 10^2$ (True)

$\Delta GHI \Rightarrow (12,16,20) \Rightarrow 12^2+16^2 = 400 = 20^2$ (True)

In ΔABC	In ΔDEF	In ΔGHI
$\sin\theta = \frac{3}{5}$	$\sin\theta = \frac{6}{10} = \frac{3}{5}$	$\sin\theta = \frac{12}{20} = \frac{3}{5}$
$\cos\theta = \frac{4}{5}$	$\cos\theta = \frac{8}{10} = \frac{4}{5}$	$\cos\theta = \frac{16}{20} = \frac{4}{5}$
$\tan\theta = \frac{3}{4}$	$\tan\theta = \frac{6}{8} = \frac{3}{4}$	$\tan\theta = \frac{12}{16} = \frac{3}{4}$

∴ Trigonometric ratios are equal in similar triangles.

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T.C. 6.2 → Page 231

(i) $(3,4,5) \xrightarrow{\times 2} (6,8,10) \Rightarrow 6^2+8^2$
$= 36+64 = 100 = 10^2$ ✓

(ii) $(5,12,13) \xrightarrow{\times 2} (10,24,26) \Rightarrow 10^2+24^2$
$= 100+576 = 676 = 26^2$ ✓

(iii) $(7,24,25) \xrightarrow{\times 2} (14,48,50) \Rightarrow 14^2+48^2$
$= 196+2304 = 2500 = 50^2$ ✓

∴ All the resultant set is pythagorian triplet.

T.C. 6.3 → Page 235

(i) $\sin\theta$:
Minimum value is 0, when $\theta = 0°$
Maximum value is 1, when $\theta = 90°$

(ii) $\cos\theta$:
Minimum value is 0, when $\theta = 90°$
Maximum value is 1, when $\theta = 0°$.

UNIT-7: MENSURATION.

T.C→7.1 Page 256

(i) T.S.A. of cuboid $= 2(lb+bh+lh)$
In cube $l=b=h=a \Rightarrow 2(a^2+a^2+a^2)$
$= 2\times 3a^2 = 6a^2 \Rightarrow$ TSA of cube

(ii) L.S.A. of cuboid $= 2(l+b)\times h$
$= 2(a+a)\times a = 2\times 2a\times a$
$= 4a^2 \Rightarrow$ LSA of cube.

T.C.→ 7.2 Page 259

Volume of cuboid $= l\times b\times h$.

(i) $V_1 = 8\times x\times 5 = 120$
$\Rightarrow 40x = 120$ ∴ Breadth $= 30$ cm

(ii) $V_2 = 4\times x\times 6 = 120$
$\Rightarrow 24x = 120$ ∴ Breadth $= 5$ cm

UNIT. IX PROBABILITY.

T.C. → 9.1 Page. 295

Given that the probability of success of an experiment $P(A) = 0.4$.

∴ for failure $P(\bar{A}) = 1-P(A)$
$= 1-0.4 = 0.6$.

∴ Probability of failure $= 0.6$.

T.C. → 9.2. Page. 296

Because, probability of any event lies between 0 to 1.
i.e $0 \le P(A) \le 1$.
In this case $\frac{3}{2}$ is greater than 1. Hence, it can't be a probability.

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