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Minimum field requirement for 400 m standard track with 8 lanes :
Length of the field : 176.91 m
Width of the field : 92.52 m
Straight : 84.390m (IAAF Rule)
2 Straight lines : $84.390+84.390=168.78 \mathrm{~m}$
$168.780 \mathrm{~m}-400 \mathrm{~m}=231.221 \mathrm{~m}$ ( 2 curves)
$2 \pi r=231.221 \mathrm{~m}$
$r=231.221 \times 7 \div 44$
$r=36.785 \mathrm{~m}$ or 36.80 RDR
$-30 \mathrm{~cm}$
$=36.50 \mathrm{~m}$ CDR (Kurb radius for temporary raised inner border)
R.D.R = Running distance radius
C.D.R = Curve distance radius

Diagonal distance calculation - Pythagoras theorem

$$
\begin{aligned}
& A B^{2}+B C^{2}=A C^{2} \\
& \mathrm{AB}=84.39 \mathrm{~m}, \mathrm{BC}=36.50 \mathrm{~m} \\
& \sqrt{84} .39 \times 84.39+36.50 \times 36.50 \\
& \sqrt{7121} .672+1332.25 \\
& \sqrt{8453} .922 \\
& =91.945 \mathrm{~m} \text { Diagonal distance }
\end{aligned}
$$

Half diagonal calculation - Pythagoras theorem

$$
\begin{aligned}
& A B^{2}+B C^{2}=A C^{2} \\
& A B=42.195 \mathrm{~m}, B C=36.50 \mathrm{~m} \\
& \mathrm{~V} 42.195 \times 42.195+36.50 \times 36.50 \\
& \mathrm{~V} 1780.42+1332.25 \\
& \mathrm{~V} 3112.67 \\
& \quad=55.988 \mathrm{~m} \text { Half diagonal distance }
\end{aligned}
$$

Calculation of 8 lanes track width :
$=2$ (Width of the 8 lanes +1 C.D.R )
$=2(1.22 \times 8+36.50)$
$=2(9.76+36.50)$
$=2 \times 46.26$
$=92.52 \mathrm{~m}$ (Width of the 400 m track)

Calculation of 8 lanes track length :
$=$ Width of the track +1 straight line
$=92.52+84.390$
$=176.91 \mathrm{~m}$ ( Length of the 400 m track)
So minimum requirement of 400 m 8 lanes track length 176.91 m and width 92.52 m .

| L.NO | 1⁄2 STAGGER | FULL SATGGER | $11 / 2$ STAGGER | 1/2 STAGGER | L.NO | DE |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| formula | $\begin{aligned} & W(n-1)-0.10 \times \pi \\ & 200 m \end{aligned}$ | $\begin{aligned} & W(n-1)-0.10 \times 2 \pi \\ & 400 m \\ & 4 \times 100 m \end{aligned}$ | $\begin{aligned} & W(n-1)-0.10 \times 3 \pi \\ & 4 \times 400 m \\ & \left(1 \frac{1}{2}+D E\right) \end{aligned}$ | $\begin{aligned} & W(n-1)-0.10 \times \pi \\ & 800 \mathrm{~m}(1 / 2+D E) \end{aligned}$ | 2 | 0 0.01 m |
| 1 | 0 | 0 | 0 | 0 | 3 | 0.03m |
| 2 | 3.519m | 7.038m | 10.564 m | 3.526 | 4 | 0.07 m |
| 3 | 7.352 m | 14.704 m | 22.088 m | 7.384 |  |  |
| 4 | 11.185m | 22.370 m | 33.630 m | 11.260 | 5 | 0.14 m |
| 5 | 15.017 m | 30.034 m | 45.185m | 15.151 | 6 | 0.22m |
| 6 | 18.850 m | 37.700 m | 56.761 m | 19.061 | 7 | 0.30 m |
| 7 | 22.683 m | 45.366 m | 68.355m | 22.989 | 8 | 0.42 m |
| 8 | 26.516m | 53.032 m | 79.965 m | 26.933 |  |  |

Calculation of DE (Diagonal excess ) formula Pythagoras theorem $A C=A^{2}+\mathrm{BC}^{2}$
> $A B=$ Length of track straight line
> $B C=$ Width of the lane
> For example : $\mathrm{AB}=$ straight line of the track 84.39 m

$$
\begin{aligned}
B C & =\text { Width of the } 2^{\text {nd }} \text { lane } 1.22 \mathrm{~m}\left(1^{\text {st }} \text { lane } 0\right) \\
& =\vee 84.39^{2}+1.22^{2} \\
& =\vee 7,121.67+1.48 \\
& =\vee 7,123.15 \\
& =84.3974-84.39 \quad(A B=\text { straight line of the track } 84.39 \mathrm{~m}) \\
& =0.01 \mathrm{DE}
\end{aligned}
$$

NOTE : After $2^{\text {nd }}$ lane every lane add 1.27 m up to 8 lanes

## 2. 200m track



Straight: 40m
2 Straight lines $40+40=80 \mathrm{~m}$

$$
\begin{aligned}
& 80 \mathrm{~m}-200 \mathrm{~m}=120 \mathrm{~m} \text { ( } 2 \text { curves) } \\
& 2 \pi r=120 \mathrm{~m} \\
& r=120 \times 7 \div 44 \\
& r=19.09 \mathrm{~m} R D R \\
& -20 \text { or } 30 \mathrm{~cm} \\
& =18.79 \mathrm{~m} C D R
\end{aligned}
$$

Diagonal distance calculation - Pythagoras theorem

$$
A B^{2}+B C^{2}=A C^{2}
$$

$A B=20 \mathrm{~m}$ ( 40 m half ), $B C=19.09 \mathrm{~m}$
$\sqrt{20 \times 20}+19.09 \times 19.09$
$\sqrt{400}+364.4281$
$\sqrt{764} .4281$
$=27.648 \mathrm{~m}$ Diagonal distance

## 200m Staggers

| L.NO | ½ STAGGER | FULL SATGGER | 1 ½ STAGGER | L.NO | DE |
| :---: | :---: | :---: | :---: | :---: | :---: |
| formula | $W(\mathrm{n}-1) \pi$ | $W(\mathrm{n}-1) 2 \pi$ | $W(n-1) 3 \pi$ | 1 | 0 |
| 1 | 0 | 0 | 0 | 2 | 0.02m |
| 2 | 3.83 m | 7.66 m | 11.50 m |  |  |
| 3 | 7.66 m | 11.53 m | 23.00 m | 3 | 0.08m |
| 4 | 11.50 m | 23.00 m | 34.50 m | 4 | 0.18m |
| 5 | 15.33m | 30.67 m | 46.01 m | 5 | 0.32 m |
| 6 | 19.17 m | 38.34 m | 57.51 m | 6 | 0.49m |
| 7 | 23.00 m | 46.01 m | 69.01 m | 7 | 0.77 m |
| 8 | 26.84m | 53.68m | 80.52m | 8 | 1.03 m |

Calculation of DE (Diagonal excess ) formula Pythagoras theorem $A C=A^{2}+B^{2}$
$>A B=$ Length of track straight line
> $B C=$ Width of the lane
For example : $A B=$ straight line of the track 37 m

$$
\begin{aligned}
B C & =\text { Width of the } 2^{\text {nd }} \text { lane } 1.22 \mathrm{~m}\left(1^{\text {st }} \text { lane } 0\right) \\
& =\vee 37^{2}+1.22^{2} \\
& =\vee 1369+1.48 \\
& =\vee 1370.44 \\
& =37.02-37(A B=\text { straight line of the track } 37 m) \\
& =0.02 \mathrm{DE}
\end{aligned}
$$

NOTE : After $2^{\text {nd }}$ lane every lane add 1.27 m up to 8 lanes

## 200m track events

200m event -full stagger (All Athletes run their own lanes from starting line to finessing line. (Lanes should not change)
400m event- $1 \& 1 / 2$ stagger (More than 3 teams )
( All Athletes after three curves cut with break line and goes to first lane )
400m event- $1 / 2$ stagger + DE (Less than 4 teams ) (NOTE: DE- means DIAGONAL EXECESS) 800m, 5000m, 10000m, events ARC START from starting line. 1500 m event- ARC START from $1^{\text {st }}$ curve line. ( $71 / 2$ rounds )

## RELAYS in 200m track

4X100m - $1 / 2$ stagger + DE (Less than 4 teams). 1 \& $1 / 2$ stagger (More than 3 teams)
( $1^{\text {st }} \mathrm{leg}$ Athletes after $1^{\text {st }}$ curve ( 3 teams) ( 4 teams after 3 curves $-3^{\text {rd }} \mathrm{leg}$ ) cut with break line and goes to first lane. Every athlete must be exchange the baton their own lanes and after exchange goes to $1^{\text {st }}$ lane)
$4 \times 400 \mathrm{~m}-1 / 2$ stagger (Less than 4 teams). $1 \& 1 / 2$ stagger + DE (More than 3 teams) ( $1^{\text {st }}$ leg Athletes after $1^{\text {st }}$ curve ( 3 teams) ( 4 teams after 3 curves $-3^{\text {rd }} \mathrm{leg}$ ) cut with break line and goes to first lane. Every athlete must be exchange the baton their own lanes and after exchange goes to $1^{\text {st }}$ lane)
NOTE: Calculation of break line. Ex: lanes $61 / 6 \times 126 \mathrm{~m}$ (Two curves) $=21 \mathrm{~m}$ break line.

| NOTE: Diagonal distance based on center line of the field |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { S.L } \\ & \text { NO } \end{aligned}$ | LENTH <br> OFTHE <br> STRIGHT <br> LINE | RUNNING <br> DISTANCE <br> RADIUS <br> (RDR) | CURVE <br> DISTANCE <br> RADIUS <br> (CDR) |  | HALF <br> DIAGONAL <br> DISTANCE | NO OF LANES | MINIMUM LENTH AND <br> BREADTH OF THE <br> REQUIRED FIELD <br> [TLR-TOTAL LENTH OF <br> REQUIRED FIELD- <br> WITHOUT 100M) | MINIMUM IENTH AND BREADTH OF THE REQUIRED FIELD /IIR-TOTAL LENTH OF REQURED FELDWITH 100M) | NO OF LANES | MINIMUMLENTH <br> AND BREADTH OF <br> THE REQURED FIELD <br> ITLR-TOTAL LENTH OF <br> REQUIRED FIED- <br> WITHOUT 100M) | minimumienth AND BREADTH OF THE REQURED FIED (TIR-TOTAL LENTH OF REQUIRED FIED. WITH 100M) |
| 1 | 30 m | 22.27m | 22.07 m | 37.2m | 26.7 m | 8 | $94.46 \mathrm{~m} \times 64.46 \mathrm{~m}$ | $100 \mathrm{~m} \times 64.46 \mathrm{~m}$ | 6 | $89.38 \mathrm{~m} \times 59.38 \mathrm{~m}$ | $100 \mathrm{~m} \times 59.38 \mathrm{~m}$ |
| 2 | 32.5 m | 21.48m | 21.28 m | 38.9 m | 26.8 m | 8 | $95.38 \mathrm{~m} \times 62.88 \mathrm{~m}$ | $100 \mathrm{~m} \times 62.88 \mathrm{~m}$ | 6 | $90.3 \mathrm{~m} \times 57.8 \mathrm{~m}$ | $100 \mathrm{~m} \times 57.8 \mathrm{~m}$ |
| 3 | 35 m | 20.68m | 20.48 m | 40.5m | 26.9 m | 8 | $96.28 \mathrm{~m} \times 61.28 \mathrm{~m}$ | $100 \mathrm{~m} \times 61.28 \mathrm{~m}$ | 6 | $91.2 \mathrm{~m} \times 56.2 \mathrm{~m}$ | $100 \mathrm{~m} \times 56.2 \mathrm{~m}$ |
| 4 | 37.5m | 19.89m | 19.69m | 42.4 m | 27.2m | 8 | $97.74 \mathrm{~m} \times 59.7 \mathrm{~m}$ | $100 \mathrm{~m} \times 59.7 \mathrm{~m}$ | 6 | $92.66 \mathrm{~m} \times 54.62 \mathrm{~m}$ | $100 \mathrm{~m} \times 54.62 \mathrm{~m}$ |
| 5 | 40 m | 19.09m | 18.89m | 44.2m | 27.5m | 8 | $98.1 \mathrm{~m} \times 58.1 \mathrm{~m}$ | $100 \mathrm{~m} \times 58.1 \mathrm{~m}$ | 6 | $93.02 \mathrm{~m} \times 53.02 \mathrm{~m}$ | $100 \mathrm{~m} \times 53.02 \mathrm{~m}$ |
| 6 | 42.5m | 18.30m | 18.10 m | 46.2 m | 27.9m | 8 | $99.02 \mathrm{~m} \times 56.52 \mathrm{~m}$ | $100 \mathrm{~m} \times 56.52 \mathrm{~m}$ | 6 | $93.94 \mathrm{~m} \times 51.44 \mathrm{~m}$ | $100 \mathrm{~m} \times 51.44 \mathrm{~m}$ |
| 7 | 45m | 17.50m | 17.30 m | 48.2m | 28.4m | 8 | $99.92 \mathrm{~m} \times 54.92 \mathrm{~m}$ | $100 \mathrm{~m} \times 54.92 \mathrm{~m}$ | 6 | $94.84 \mathrm{~m} \times 49.84 \mathrm{~m}$ | $100 \mathrm{~m} \times 49.84 \mathrm{~m}$ |
| 8 | 47.5m | 16.71m | 16.51 m | 50.3m | 28.9m | 8 | $100.84 \mathrm{~m} \times 53.34 \mathrm{~m}$ | $100 \mathrm{~m} \times 53.34 \mathrm{~m}$ | 6 | $95.76 \mathrm{~m} \times 48.26 \mathrm{~m}$ | $100 \mathrm{~m} \times 48.26 \mathrm{~m}$ |
| 9 | 50 m | 15.91m | 15.71m | 52.4m | 29.5 m | 8 | $101.74 \mathrm{~m} \times 51.74 \mathrm{~m}$ | $100 \mathrm{~m} \times 51.74 \mathrm{~m}$ | 6 | $96.66 \mathrm{~m} \times 46.66 \mathrm{~m}$ | $100 \mathrm{~m} \times 46.66 \mathrm{~m}$ |

## 3. Hurdles

| Event | Height of Hurdles* | Distance from Starting line to First Hurdle** | Distance between Hurdles** | Distance from Last Hurdles to Finish line** | Number of Hurdles |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 110m Men | 1.067m | 13.72m | 9.14m | 14.02m | 10 |
| 110m Junior Men | 0.991m | 13.72m | 9.14 m | 14.02m | 10 |
| 110m Youth Boys | 0.914m | 13.72m | 9.14 m | 14.02m | 10 |
| 100m Women / Junior | 0.838m | 13.00m | 8.50m | 10.50m | 10 |
| 100mYouth Girls | 0.762m | 13.00m | 8.50m | 10.50m | 10 |
| 400m Men / Junior | 0.914m | 45.00m | 35.00m | 40.00m | 10 |
| 400m Youth Boys | 0.838m | 45.00m | 35.00 m | 40.00m | 10 |
| 400m Women / Junior / Youth | 0.762m | 45.00m | 35.00 m | 40.00m | 10 |
| Note: $* \pm 0.003 \mathrm{~m}$ <br> ** $\pm 0.001$ for 100 m and | $\pm 0.03 \mathrm{for}$ |  |  |  |  |

## MEASUREMENTS :

Width of the hurdle : 1.18 m (Min) to 1.20 m (Max) Length of the hurdle base : 0.70 m (Max)
Length of the hurdle top bar: $70 \mathrm{~mm}( \pm 5 \mathrm{~mm})$
Thickness of the hurdle top bar : 10 mm to 25 mm
Hurdle top bar shape : Rounded
Weight of the hurdle : 10 kg
Hurdle marks in track : Length -10 cm
Width - 5 cm


## 4. Relays

## MEASUREMENTS :

Length of the baton : 280 mm to 300 mm
Circumference of the baton : $40 \mathrm{~mm}( \pm 2 \mathrm{~mm})$
Weight of the baton: 50gr
Acceleration zone: 10m
Length of acceleration mark : $5 \mathrm{~cm} \times 60 \mathrm{~cm}$
Take over zone : 20m
Take over zone mark: 5cm x 40cm (Between take over zones)


## 5. Long Jump



## PIT MEASUREMENTS :

Length of the runway
Width of the runway
Length of the Landing Are
Width of the Landing Are
Sand depth
: 40m (Minimum) (from take-off line)
$: 1.22 \mathrm{~m}( \pm 0.01 \mathrm{~m})$
: 7 m to 9 m
: 2.75 m to 3 m
: 30 cm (Minimum)

TAKE OF BOARD
Length of the Take of Board
Width of the Take of Board
Depth of the Take of Board
Take of board color
Distance between take of line to nearer edge of the Landing area
Distance between take of line to ending edge of the Landing area
Width of the Plasticine board
Height of the Plasticine board
Angle of the Plasticine board
Distance between take of board to Plasticine
: 1.22 m ( $\pm 0.01 \mathrm{~m}$ )
: $20 \mathrm{~cm}( \pm 2 \mathrm{~mm})$
: 10 cm
: white (Must)
: 1m to 3m
: 10m (Minimum)
: 10 cm
: 7 mm

: $45^{\circ}$
: 30cm (Approx.)

## 6. Triple Jump



## PIT MEASUREMENTS :

Length of the runway
Width of the runway
Length of the Landing Are
Width of the Landing Are
Sand depth
TAKE OF BOARD
Length of the Take of Board
Width of the Take of Board
Depth of the Take of Board
Take of board color
Distance between take of line to nearer edge of the Landing area
Distance between take of line to ending edge of the Landing area
Width of the Plasticine board
Height of the Plasticine board
Angle of Plasticine board
Distance between take of board to Plasticine
: 40m (Minimum)
$: 1.22 \mathrm{~m}( \pm 0.01 \mathrm{~m})$
: 8 m to 9 m
: 2.75 m to 3 m
: 30 cm (Minimum)
: $1.22 \mathrm{~m}( \pm 0.01 \mathrm{~m})$
: $20 \mathrm{~cm}( \pm 2 \mathrm{~mm})$
: 10 cm
: white (Must)
: 13m (Men) to 11m (Women)
: 21m (Minimum)
: 10 cm
: 7 mm
: $45^{\circ}$
: 30cm (Approx.)

## 7. High Jump



## MEASUREMENTS :

Runway Area

Width of the Runway
Level Area
Distance between Up rights
Crossbar supports
Length of the crossbar
Diameter of the crossbar
Distance between Up rights and crossbar
Length of the crossbar ending
Diameter of the crossbar ending
Width of the crossbar ending
Weight of the crossbar
Distance between top of the Up rights and crossbar
Landing mat length $x$ Width
Height of the Landing mat
Distance between Landing area and Up rights
Width of the Up rights line
: 15m to 20m (Semi-Circle)
(Where conditions permit-25m)
: 16m (Semi circle)
: 10 m X 1m
: 4 m (Min) and 4.04m (Max)
: $60 \mathrm{~mm} \times 40 \mathrm{~mm}$ (Flat and Rectangle)
: $4 \mathrm{~m}( \pm 20 \mathrm{~mm})$
: 30mm ( $\pm 1 \mathrm{~mm}$ ) (Circular part)
$: 1 \mathrm{~cm}$ or 10 mm
: 0.15 m to 0.20 m
: 30 mm ( $\pm 1 \mathrm{~mm}$ )
: 30 mm to 35 mm
: 2 kg
: 10cm (Min.at Max.height)
: 5m X 3m (Other competition) $6 \mathrm{~m} \times 4 \mathrm{~m}$ (International)
: 70 cm
: 0.1 m
: 50mm

## 8. Pole Vault



## MEASUREMENTS :

Runway Area
Landing area length $x$ Width
Height of the Landing area
Up rights front side mat
Distance between landing area to vaulting box
Note: Zero line means Putting place of the Up rights.
Zero line thickness
: 1cm
Distance between pegs
. 4.28 m to 4.37 m
Note: Pegs means Pole vault crossbar supports.
Length of the supporting member
: 55mm (Max)
: 13mm (Max)
: 35 mm to 40 mm
$: 4.50 \mathrm{~mm}( \pm 0.02 \mathrm{~m})$
: 30mm ( $\pm 1 \mathrm{~mm}$ ) Circular part
$: 0.15 \mathrm{~m}$ to 0.20 m
$: 30 \mathrm{~mm}( \pm 1 \mathrm{~mm})$
: 30 mm to 35 mm
: 2.25 kg
: 1m
: 60 cm
: $105^{\circ}\left(-0^{\circ} /+1^{\circ}\right)$
: 408mm
: 224 mm
: 150mm
: 1.084m


## MEASUREMENTS :

Circle diameter
: 2.135 m
Circle radius
: 1.067m
Extension of the center lines from the Circle
: 750mm
Length of the stop board
Width of the stop board - Middle
: 1.21m ( $\pm 0.01 \mathrm{~m})$

- Ending
$: 11.2 \mathrm{~cm}( \pm 0.002 \mathrm{~m})$
$: 30 \mathrm{~cm}( \pm 0.002 \mathrm{~m})$
Height of the stop board
Thickness lines
$: 10 \mathrm{~cm}( \pm 0.002 \mathrm{~m})$

Angle of the Shot Put Sector
: 5 cm (outside of the sector)
: 34.92 ${ }^{\circ}$


Weight of the Shot Put :

| Men | $: 7.26 \mathrm{~kg}(16 \mathrm{Lbs})$ - Diameter : 110 mm to 130 mm |
| :--- | :--- |
| Boys | $: 6 \mathrm{~kg}(12 \mathrm{Lbs})-$ Diameter : 105 mm to 125 mm |
| Women and Girls | $: 4 \mathrm{~kg}(8 \mathrm{Lbs})-$ Diameter : 95 mm to 110 mm |

## 10.Discus Throw



MEASUREMENTS :

| Circle diameter | $: 2.50 \mathrm{~m}$ |
| :--- | :--- |
| Circle radius | $: 1.25 \mathrm{~m}$ |
| Extension of the center lines from the Circle | $: 750 \mathrm{~mm}$ |
| Angle of the Shot Put Sector | $: 34.92^{\circ}$ |

Weight of the Discus:

| Men | 2kg - Diameter : 219 m |
| :---: | :---: |
| Women / Boys and Girls | 1 kg - Diameter : 180 mm to 182mm |
| etal plate | 50 mm to 57 mm (Men \& Women) |
| metal plate | 44 mm to 46 mm (Men) |
|  | : 37 mm to 39 mm (Women) |
|  | : 12 mm to 13 mm |





## 13. Badminton

Batminton (shuttle) court


MEASUREMENTS :

| Court | Singles | Double |
| :--- | :---: | :---: |
| Length | 13.40 m | 13.40 m |
| Width | 5.18 m | 6.10 m |
| Short service line | 1.98 m | 1.98 m |
| Long service line | 6.70 m | 5.94 m |
| Lines thickness | 4 cm | 4 cm |

Poles:
Length
$: 1.55 \mathrm{~m}$ (Fix on double side line)
Circumference : 4cm
Net:
Length : 6.10m
Width
: 76 cm
Height
: 1.55m (At pole)
: 1.524m (Center)
Tape : 75mm
Rocket :

$$
\begin{array}{ll}
\text { Parts } & : \text { Head, Throat, Shaft, Handle } \\
\text { Length } & : 680 \mathrm{~mm} \text { (Not more than) } \\
\text { Length and width of the head }: & 280 \mathrm{~mm} \text { and 220mm (Not more than) } \\
& \text { (Stringed Area) } \\
\text { Weight } & : 100 \mathrm{gr}
\end{array}
$$



Shuttle :

| Weight | $: 4.74$ to 5.50 gr |
| :--- | :--- |
| Length of the feathers | $: 62 \mathrm{~mm}$ to 70 mm |
| Number of feathers | $: 16$ |

Circumference of the feathers tip (Top) : 58 mm to 68 mm
Circumference of the base (Bottom) : 25 mm to 28 mm
Length of the shuttle top to bottom : 62mm to 70 mm
Game
: Singles, Double, Mixed doubles
Points : 21 Points, Best of the three
Rest between games : 120 sec
Rest after 11 points court change : 60 sec
Referees : Referee-1
Assistance referee - 1
Umpire - 1
Service judge - 1
Line judge - 4 (Minimum)

$$
10 \text { ( Maximum) }
$$

List of line judges in international matches:
Short service line judges - 2
Centre line judges - 2
Side line judges - 4
Back boundary line judges - 2
Cards :
Yellow card - Warning
Red card - Warning with additional point to opponent Black card - Disqualification

Diagonals :


Shutrle full court for singles diagonal distance marking


Shuttle half court for singles diagonal distance marking


Shuttle full court for doubles diagonal distance marking

Shuttle half court for doubles diagonal distance marking


Badminton court marking with center court diagonal step by step


Singles court $13.40 \mathrm{~m} \times 5.18 \mathrm{~m}$ center court diagonal distance -7.18 m


## 3D BADMINTON

RAJESH AGOLA


Service for doubles


High service
Service for singles
Drive service

Flick service

3D BADMINTON
RAJESH AGOLA

High service
Service for doubles
Drive service

Flick service


Drops


## 14. Ball Badminton

## Ball badminton court



MEASUREMENTS :
Court :
Length : 24 m
Width : 12m
Lines thickness : 2.5 cm
Center line to Service line : 1m
Ball on the line right. (So Lines are including the court)
Post :
Height : 2m
Distance between Center line to pole : 1m
Net :
Length : 13.5 m
Width : 1m
Height : 1.85m (At pole)
: 1.83m (Center)
Mesh : 2cm
Ball :
Weight : 22 gr to 23 gr
Circumference : 5 cm to 5.5 cm
Color : Yellow
Rocket :
Length : 63 cm to 70 cm
Width of the frame : 20 cm to 22 cm
Length of the frame : 24 cm to 27 cm
Length of the handle : 39 cm to 43 cm
Weight : 200 gr to 250gr


Players:
Team : 10
Playing Players: 5
Substitution: 5 (Each team each game can substitute 3 players)
No time outs for singles
Game: Best of three games
Rest : Between first and second: 2 min
Between second and third game : 5min
Time outs : Each team one time to each game
Time out time : 1 min
Points : 35 points ( $9,18,27$ points court change)
Whom reach first 39th point

Ball badminton full court for fives diagonal distance marking


Ball badminton half court for fives diagonal distance marking


Ball badminton half court for doubles diagonal distance marking


Ball badminton full court for doubles diagonal distance marking



## 15. Basketball



## MEASUREMENTS :

Court :
Length : 28 m
Width: 15 m
Radius of the center circle : 1.80 m
Radius of the three point area : 6.75 m
Distance between three points line to side line : 90 cm
Throw-in line : 15 cm
Length of Extension line from center line : 15 cm
Team bench from Center line : 5 m
Team bench from Side line: 2 m
Length and Width of restricted line : $5.8 \mathrm{~m} \times 4.9 \mathrm{~m}$
Radius from middle restricted line : 1.8 m
Thickness of the lines: 5 cm
Lobby : 2 m
Board :
Board height from ground : 2.90 m
Length and width : $1.80 \mathrm{~m} \times 1.05 \mathrm{~m}$
Thickness of the board : 3 cm
Board from end line : 1.2 m
Ring :
Ring net length: 45 cm
Ring metal diameter: 20 mm
Circumference of the ring inside : 45 cm
Number of loops: 12
Distance between ring to board : 0.15 m


Distance between end line to middle of the ring : 1.575 m
No charge semi-circle from middle of the ring : 1.25 m

Ball :
Men : 567 gr to 650 gr - Diameter : 74.9 cm to 78 cm
Women : 510 gr to 567 gr -- Diameter : 72.4 cm to 73.7 cm
Juniors : 470 gr to 500 gr - Diameter : 69 cm to 71 cm
Players:
Team : 12
Playing players: 5


Substitution: 7
Players chest numbers : 1 to 99
Game :
Match start with : Jump ball
4 quarters.
Each quarter 10min time.
Rest between quarters: 2 min (First and Second half)
Rest between half time : 15 min
Time outs : Each team have 2 time outs in first half
Each team have 3 time outs in second half ( $4^{\text {th }}$ quarter 2 time outs permitted)
Extra period time out : 1 (Each team)
Match tie : 5-2-5 (Extra period)
Officials :
Referee (Crew chief) - 1
Umpires -1 or 2
Scorer-1
Assistance Scorer-1
Time keeper - 1
Shot clack operator - 1

## Basketball court marking plan

Rajesh Agola


Basketball court marking plan
Rajesh Agola


Basketball court marking with center court diagonal step by step


My YouTube channel: rajagola
Website : www.ap-physical-literacy.com

## 16. Cricket



## MEASUREMENTS :

Pitch :
Length of the pitch : 20.12m
Width of the pitch : 3.05 m
Length of the Bowling crease : 2.64 m
Popping crease : 1.22m
Length of the return crease : 2.44 m
Bat :
Length : 96.5 cm
Width : 10.8 cm
Handle : 228 mm
Weight : 1.2 kg to 1.4 kg
Ball :
Weight : 155.9gr to 163 gr
Circumference : 22.4 cm to 22.9 cm
Juniors (U-13) : 133gr to 144 gr
Wickets :
Height : 71.1cm
Circumference : 3.18 cm to 3.49 cm


BAT


BALL


WICKETS

Length of the Bails : 10.95 cm
Width of the wickets : 22.86 cm
Players:
Team: 16
Playing players: 11
Substitution: 5

## Officials :

On field umpires : 2
Third umpire: 1
Scorer: 1
Assistant scorer : 1
Referee : 1

## Game :

Three formats ;

1. Test cricket: Four innings, each team two, Minimum per day 90 overs.
2. One day international cricket: 50 overs each team.
3. Twenty - 20 cricket: 20 overs each team.

Laws: 42
Follow-on in test matches:
5 days matches - 200 runs
3 or 4 days match - 150 runs
2 days match - 100 runs
1 day match - 75 runs




## MEASUREMENTS :

International Field :
Length: 100 m ( 110 yds ) to 110 m ( 120 yds )
Width : 64 m ( 70 yds ) to 75 m ( 80 yds )
General field :
Length : 90m ( 100 yds ) to 120 m ( 130 yds )
Width : 45m (50 yds) to 90 m ( 100 yds )
Thickness of the lines: 12 cm ( Not more than ) (5 inches)
Goal area : 5.50 m ( 6 yds )
Penalty area : 16.50 m ( 18 yds )
Distance between penalty mark and Goal line : 11m (12 yds)
Penalty arc from penalty mark: 9.15m (10 yds)
Radius of center circle : 9.15m (10 yds)
Corner arc : 1m (1yds)
Goal post :
Height : $2.44 \mathrm{~m}(8 \mathrm{ft})$
Distance between posts : 7.32 m ( 8 yds )
Circumference of the post : 12 cm (5 inches)
Color : white (Must)
Corner flags :
Height : 1.5 m ( 5 ft )
Number of flags : 6 ( 4-compulsory, 2 optional )


## Ball : Shape : spherical

Weight : 410gr (14 oz)to 450gr (16 oz)
Circumference : 68 cm ( 27 inches) to 70 cm (28 inches)
pressure equal to $0.6-1.1$ atmosphere ( $600-1,100 \mathrm{~g} / \mathrm{cm} 2$ )
at sea level ( $8.5 \mathrm{lbs} / \mathrm{sq}$ in $-15.6 \mathrm{lbs} / \mathrm{sq} \mathrm{in}$ )
Players:


Team : 18
Playing players: 11
Substitution: 3
Game :
$90 \min (45+15+45)$
Rest : 15 min
Match start with : Kick off
Officials :
Referee : 1
Assistant referees : 2
Forth official or Scorer : 1
Additional Assistant referees or goal line referee : 2
Reserved referee : 1
GLT- goal-line technology.
Laws : 17


Cards:
Yellow card : Warning (Yellow + yellow = red card)
Red card: Suspended from match. No substitution



Football field marking with center court diagonal step by step


Field $100 m \times 64 m-59.36 m$
Field $100 \mathrm{~m} \times 50 \mathrm{~m}--55.9 \mathrm{~m}$

## 18. Handball

## Handball court



## MEASUREMENTS :

Court :
Length : 40m
Width : 20m
Distance between Goal post to goal area (D-zone): 6m
Distance between Goal post to Free throw line : 9m
Distance between Goal post to Free throw line : 3m
Goal keeper Restraining line from post line : 4 m
Length of the Restraining line : 15 cm
Penalty mark: 7m (Free throw line)
Thickness of the lines: 5 cm
Thickness of the post line : 8cm
Substitution zone : 9m
Substitution zone from center line both sides : 4.50m
Substitution line : 15 cm (Inside of the court)
15 cm (Outside of the court)
Posts :
Height : 2m
Distance between posts : 3m


Circumference : 8cm


Players :
Men : 425 gr to 475 gr - Circumference : 58 cm to 60 cm
Women : 325 gr to 375 gr - Circumference : 54 cm to 56 cm
Sub juniors ( 8 to 12 years ) : 290 gr to 330 gr - Circumference : 50 cm to 52 cm

Team : 14
Playing players: 7
Substitution : 7 (Rolling substitution)

## Handball players <br> positions



Game :
Men \& women (Seniors ) : $60 \min (30+10+30)$
Boys and Girls (Juniors ) : 50 min ( $25+10+25$ )
Sub juniors: $40 \mathrm{~min}(20+10+20)$
Rest : 10 min
Time outs :
Number of time outs: Each team- 3 (But can use only 2 time outs per set. Ex: $1+2$ or $2+1$ )
Time : 1 min (60sec)
Match tie : First over time, Second over time.
After completion of two overtimes go for 7-m throws
Overtime time : 5min
Rest : 1min
Officials :
Referee-2
Scorer-1
Time keeper - 1
Cards :
Yellow card : Warning
Red card : 2 min suspension (Substitution not allowed)
Blue card : Disqualified


## Handball court marking plan

Rajesh Agola


Handball court marking plan
Rajesh Agola


Handball court marking with center court diagonal step by step


## 19. Hockey



## MEASUREMENTS :

Field :
Length of the field : 91.40m
Width of the field : 55m
Shooting circle ( D - Area) : 14.63m
Distance between Goal line to Penalty mark : 6.475 m
Circumference of the penalty mark : 150 mm
Penalty corner marks from post : 4.975 m and 9.975 m (Approx. -5 m and 10 m )
23 meters Area line from End line : 22.90 m
Broken line from circle lines: 5 m
Thickness of the lines: 7.5 cm

## Posts :

Height : 2.14 m
Distance between posts : 3.66 m
Width of the crossbar : 50 mm (White must)
Thickness of the crossbar : 75 cm
Length of back board : 3.66 m
Height of the back board : 460 mm
Length of the side board : 1.20 m
Height of the side board : 460mm
Net mesh : 45mm
Corner flags :
Height : 1.20 m to 1.50 m
Width : 30 cm or 300 mm
Number of flags : 4

Stick :
Length : 105 cm (Not more than) or 32 in to 36 in
Weight: 737gr
Ring pass stick diameter : 51mm
Ball :
Weight : 156 gr to 163 gr
Circumference : 224 mm to 235 mm
Players :
Team : 16 (SGFI-18)
Playing players: 11
Substitution: 5 (Rolling substitution)

## Game :

Match start with : Push back (Previously - Bully-off method)
4 quarters ( International and Senior national men \& women )
Each quarters : 15min
Rest between quarters: 2min
Rest between $2^{\text {nd }}$ and $3^{\text {rd }}$ quarters: 10 min
Duration : Juniors and other categories 70min (35+5+35)
Officials :
Main umpires; 2
Technical officials : 2
Technical director : 1
Cards :
Green card ( ) : Warning or 2 min suspension (Green + Green = Yellow)
Yellow card ( $\quad$ ) : 5min suspension (Yellow +Yellow = Red)
Red card (O) : Suspended from match


Hockey field marking plan
Rajesh Agola


## 20. Kabaddi



MEASUREMENTS :

| Category | Length | Width | Center line | Lobby | Back line | Bounce <br> line | End line |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  <br> Junior boys | 13 m | 10 m | 6.5 m | 1 m | 3.75 m | 1 m | 1.75 m |
|  <br> Junior girls | 12 m | 8 m | 6 m | 1 m | 3 m | 1 m | 2 m |
| Sub junior <br> boys \& girls | 11 m | 8 m | 5.5 m | 1 m | 3 m | 1 m | 1.5 m |

Thickness of the lines: 3 cm to 5 cm
Sitting box: $8 \times 1$
Players:
Team : 12
Playing players: 7
Substitution : 5
Game :
Men: 40min $(20+5+20)$
Women : 30min ( $15+5+15$ )
Time outs : each team -2 (Each half)
Time out duration : 30 sec
Symbols:
Bonus: $\triangle$
Loan : (-) All-out
Technical point : 0

First leading point :
Running score : $\square$
Time Outs: T
Super Catch Point : X (Cross mark)

## Officials :

Referee : 1
Umpires: 2
Scorer: 1
Assistance scorer : 2
Line men : 2
Warning cards :


Green : An initial warning for any violation of rules
Yellow : 2 minute suspension from the game along with 1 technical point to the opposition.
Red : 1 technical point to the opposition and suspension for the rest of the match. In this case, the team that loses the player shall continue the match with the remaining number of players. No substitution for a red carded player is allowed

Kabaddi court full diagonal (Men Seniors / juniors boys)


A
13m
B

Kabaddi court half diagonal (Men Seniors / juniors boys)


Kabaddi court marking with center court diagonal step by step


My YouTube channel: rajagola
Website : www.ap-physical-literacy.com

## 21. Kho-Kho

## Kho-Kho <br> Men \& women. Boys and Girls (Seniors and juniors) court



MEASUREMENTS :

| Category | Length | Width | Pole to <br> Pole | Pole to 1 <br> square | Between <br> Sitting <br> boxes | Free <br> zone | Sitting <br> Square |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Men \& Women, Junior <br> Boys \& Girls | 27 m | 16 m | 24 m | 2.55 m | 2.30 m | 1.50 m | $35 \times 30 \mathrm{~cm}$ |
| Sub Junior Boys \& Girls | 23 m | 14 m | 20 m | 2.15 m | 1.90 m | 1.50 m | $30 \times 30 \mathrm{~cm}$ |

Thickness of the lines : 2 to 4 cm
Pole :
Height : 1.20 m to 1.25 m
diameter: 9 cm to 10 cm
Circumference : 28.25 cm to 31.4 cm
Players:
Team: 12
Playing players: 9
Substitution: 3
Game :
Turns: 4
Innings: 2
Men \& Women, Junior Boys \& Girls : $\quad(9+3+9) 6(9+3+9)$ Total 48 min
: Each innings 9 min , Rest between innings 3 min , Rest between turns 6 min .
Sub Junior Boys \& Girls: $(7+3+7) 5(7+3+7)$ Total $39 m i n$
: Each innings 7min, Rest between innings 3min, Rest between turns 5 min .

Officials :
Referee : 1
Umpires: 2
Scorer: 1
Assistance scorer : 1
Time keeper : 1

Kho-Kho court
Seniors Men \& women \& juniors Boys and Girls (U-18) (above 14 years)


Kho-Kho court
Seniors Men \& women \& iuniors Boys and Girls (U-18) [above 14 years)


Kho-Kho court marking with center court diagonal step by step
Court $27 \mathrm{mX16m}$ Men \& Women, boys and girls U-18 (above 14 years)


Sub juniors (U-14) center court diagonal distance 13.46 m
Note: After marking all corners should erase the center imaginary line

## 22. Sepaktakraw



## MEASUREMENTS :

Court :
Length : 13.40m
Width : 6.10 m
Lines thickness: 4cm
Thickness of the Center line : 2 cm
Free zone : 3.0m
Net :
Length : 6.1 m
Width : 0.7 m
Height : Men-1.55m (At pole)
: Men-1.52m (Center)
: Women - 1.45m (At pole)
: Women - 1.42m (Center)
Service circle : 30 cm or 0.3 m (From side line 3.5 m , from end line 2.45 m )
Quarter circle : 0.9 m or 90 cm
Ball :
Weight :
Men $\quad-170 \mathrm{gr}$ to 180 gr (12 holes)
Women - 150gr to 160gr
Circumference :
Men $\quad-0.41 m$ to $0.45 m$
Women $-0.42 m$ to $0.44 m$


Players :
Team: 5
Playing players: 3
Substitution: 2

## Team events :

Team: 15
Playing players: 9
Substitution: 3
Game :
Best of three sets.
Each set 21 points. (Difference between 2 points continue to $25^{\text {th }}$ point. First $25^{\text {th }}$ point reaching team win the set)

Sepakatakraw full court diagonal distance marking


Sepakatakraw half court diagonal distance marking


Sepaktakraw court marking with center court diagonal step by step


## 23. Softball



## MEASUREMENTS :

Diamond Area :
Men : 76.20m
Women : 67.06 m
Home Plate / Home base :
Length : 45 cm
Width : 22 cm
Diagonal: 31.8 cm
Batter box :
Length : 2.2 m
Width: 1 m
Catchers box :
Length : 3.05 m
Width : 2.75 m
Distance between two batters box: 0.75 m
Pitchers plate :
Length : 60.96 cm
Width : 15.24 cm
Radius of the pitcher Plate circle : 2.44 m
Distance between home plate and pitching plate :
Men : 14.02m ( 46 feet's)
Women : 13.11 m ( 43 feet's)
Sub juniors : 12.19 m ( 40 feet's)
Home base to base line : 18.29 m
Measurements $1^{\text {st }}, 2^{\text {nd }}, 3^{\text {rd }}$ bases: 38 cm to 38 cm
Distance between base to base : 18.29 m
Catchers box to back stop : 7.26 m to 9.14 m

Batter's box : (Upcoming / Next batsman's box)
Length : 9.14m
Width : 0.91m
On deck circle : 0.76 m
Coachers box :
Length : 4.57 m
Width : 0.91m
Diagonal of home plate to Second base : 25.86m
Slugger :
Length : 86.4 cm
Radius: 5.715 cm ( $21 / 4$ inch)
Length of the safety grip : 25.4 cm (10 inch)
Weight : 1077gr
Ball :
Weight : 178gr to 198.4 gr
Circumference : 30.2 cm to 30.8 cm
Players:
Team : 16
Playing players: 9


Substitution: 7
Game :
General matches: 5 innings
National and International : 7 innings
Officials :
Referee : 1
Plate umpire : 1
Base umpire : 2
Scorer: 1


## 24. Tennikoit

Tennikoit court


## MEASUREMENTS :

Court :
Length: Singles Doubles
$12.20 \mathrm{~m} \quad 12.20 \mathrm{~m}$
Width: $2.75 \mathrm{~m} \quad 5.50 \mathrm{~m}$
Lines thickness : 5cm (Inside of the court)
Restricted or caution line : $5.50 \mathrm{~m} \times 2.15 \mathrm{~m}$
Center line to dead line (Neutral zone) : 0.9m
End line to restricted line : 5.2m
Zone line : Dividing the two courts.
Post :
Length : 1.90m
Circumference: 6 cm
Distance between pole to side line : 45 cm
Length of the antenna : 1.06 m
Circumference of the antenna : 2.5 cm to 3.8 cm
Height of the antenna above net : 0.50 m
Between antennas: 5.5m
Antenna color : Black and White
Net :
Length : 6.1 m
Width : 70 cm
Height : 1.80m (Middle)

: 1.67 m (Sub juniors)
Mesh : 2.5 cm
Tape: 5cm

Tennikoit :
Weight : 198gr to 226gr
Inside diameter: 16 cm
Outside diameter: 10 cm
Thickness of the ring : 3 cm
Players:
Team: 6
Playing players: 2
Substitution: 3
Game :
Best of three sets.
Each set 21 points.
Last set 11 points court change.
No substitution in Tennikoit singles match.
Time outs : 1 (Each team and each set)
Time out duration: 30sec
Rest between sets : 2 min
$3^{\text {rd }}$ set rest: 3 min
Cards :
Yellow card : Warning
Red card : one point and service to opponent
Yellow and Red card separately : Suspension from match
Yellow and Red card jointly : announce set winner to opponent
Officials :
Referee : 1
Assistant referee : 1
Scorer: 1
Lineman's: 2 or 4

Tennikoit full court for doubles diagonal distance marking


Tennikoit half court for doubles diagonal distance marking


Tennikoit full court for singles diagonal distance marking


Tennikoit half court for singles diagonal distance marking


Tennikoit court marking with center court diagonal step by step


Singles court $\mathbf{1 2 . 2 0 m} \times 4.6 \mathrm{~m}$ center court diagonal distance- $\mathbf{6 . 5 2 m}$

## 25. Throwball



MEASUREMENTS :

| Category | Length | Width | Neutral box | Lines |
| :--- | :---: | :---: | :---: | :---: |
| Seniors | 18.30 m | 12.20 m | 1 m | 5 cm |
| Juniors | 18.30 m | 12.20 m | 1 m | 5 cm |
| Sub juniors | 15.30 m | 9.20 m | 1 m | 5 cm |

Service zone : 6.10m
Free zone : 2m
Post :
Length: 3m
Circumference : 8 cm to 10 cm
Post to side line : 50 cm
Net :
Length : 12.2m
Width : 1m
Height :
Senior Men \& Women : 2.30m
Juniors: 2.10m
sub Juniors: 2 m
Length of the antenna : 1.80m
Circumference of the antenna : 10mm
Height of the antenna above net : 0.80 m
Mesh : $10 \times 10 \mathrm{~cm}$

## Ball :

Weight : 400gr to 450gr
Circumference : 70 cm to 72 cm
Players:
Team : 14 (SGFI-12)
Playing players: 9
Substitution: 5 (SGFI-3)


Note : Each set can substitute 5 players (Association and SGFI)
Game :
Best of five sets.
Each set 15 points.
Each set 8 points court change.
Each set two time outs.
Each time out 30 sec
(Difference between 2 points continue to 16 point. First $17^{\text {th }}$ point reaching team win the set)
Officials :
Referee : 1
Umpire: 1
Scorer: 1
Assistant scorer : 1
Lineman's: 2


## Throwball half court diagonal distance marking



Throwball court marking with center court diagonal step by step


## 26. Volleyball



MEASUREMENTS :
Court :
Length: 18m
Width : 9 m
Center line to Attacking line : 3 m
Attacking line to End line: 3m
Lines thickness: 5cm (Inside of the court)
Free zone : 3 m (FIVB international matches 5 m from side line, 6.5 m from end line)
Attacking line extension from side line : 1.75 m (dotted line)
Post :
Height: 2.55 m
Distance between side line to pole : 0.50 m to 1 m
Distance between pole to pole : 10 m to 11 m
Net :
Length : 9.50 m to 10 m
Width : 1m
Height: 2.43 m (Men)
: 2.24 m (Women)
Mesh : $10 \mathrm{~cm} \times 10 \mathrm{~cm}$
Top band: 7 cm
Side band: 5 cm
Antenna :
Height of the antenna : 1.80 m
Height of the antenna above net: 0.80 m or 80 cm
Circumference : 10 mm (Red \& white)


## Ball :

Weight : 260 gr to 280 gr
Circumference : 65 cm to 67 cm
Air pressure : 0.30 to $0.325 \mathrm{~kg} / \mathrm{cm}^{2}$
Players:
Team : 12 (FIVB International matches-14)


Playing Players: 6
Substitution: 6
Game :
Best of five sets
Each set 25 points (Last set - 15 points. 8 points court change)
Time outs - 2 (Each set- Each team)
Rest between sets : 3 min
Technical time outs: Every set up to $4^{\text {th }}$ set, common technical time outs ( $8^{\text {th }}$ and $16^{\text {th }}$ ) for two teams.
This is only for FIVB international match only. No technical time outs to $5^{\text {th }}$ set.
Technical time outs duration : 60sec
(Difference between 2 points continue until win the set)

## Officials :

First referee -1
Second referee -1
Scorer-1
Assistant scorer -1
Line judges - 2 (Other competitions)
Line judges - 4 (International matches)
Line judges flags : 40x 40cm
Cards :
Yellow card : warning
Red card: One point and service to opponent.
Yellow and Red card jointly: Expulsion from set. Substitution allowed.
Yellow and Red card separately: Disqualification from match. Substitution allowed.

## Volley ball court marking plan Rajesh Agola



Volley ball court marking plan
Rajesh Agola


Volleyball court marking with center court diagonal step by step


My YouTube channel: rajagola
Website : www.ap-physical-literacy.com

## All games courts diagonals

| Name of the Game | Category <br> Men/women | Length of the court | Width of the court | Full court diagonal | Half court diagonal | center court diagonals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Badminton | Singles | 13.40m | 5.18m | 14.366m | 8.5m | 7.18m |
|  | Doubles | 13.40m | 6.10m | 14.723m | 9.06m | 7.36m |
| Ball badminton | Doubles | 24m | 6m | 24.738m | 13.416m | 12.31m |
|  | Fivers | 24m | 12m | 26.832m | 16.970m | 13.42m |
| Basketball | Men\&Women | 28m | 15m | 31.764m | 20.518m | 15.88m |
| Cricket | Men\&Women | 20.12m | 3.05m | --- | --- | --- |
| Football | Men\&Women | 110m | 64m | 127.26m | 84.71m | 63.63m |
|  | Men\&Women | 100m | 64m | 118.726m | 81.215m | 59.36m |
|  | Men\&Women | 100m | 50m | 111.803m | 70.7106m | 55.9m |
| Handball | Men\&Women | 40m | 20m | 44.721m | 28.284m | 22.36m |
| Hockey | Men\&Women | 91.40m | 55m | 106.67m | 71.508m | 53.34m |
| Kabaddi | Men | 13m | 10m | 16.40m | 11.926m | 8.2m |
|  | Women | 12m | 8m | 14.422m | 10m | 7.2m |
| Kho-Kho | Men\&Women | 27m | 16m | 31.4m | 20.93m | 15.69m |
|  | Sub juniors | 23m | 14m | 26.92m | 18.18m | 13.46m |
| Sepaktakraw | Men\&Women | 13.4m | 6.1m | 14.72m | 9.1m | 7.36m |
| Softball | Men\&Women | 18.29m | 18.29m | 25.865m | --- | --- |
| Tennikoit | Singles | 12.2m | 4.6m | 13.04m | 7.64m | 6.52m |
|  | Doubles | 12.2m | 5.5m | 13.38m | 8.21m | 6.69m |
| Throwball | Men\&Women | 18.30m | 12.20m | 21.993m | 15.2499m | 10.97m |
| Volleyball | Men\&Women | 18m | 9m | 20.124m | 12.727 | 15m |

## Gymnastics



## Artistic gymnastics

Pommel Horse




Single bar or Horizontal bar

Artistic gymnastics Horizontal bar and Parallel bar


Artistic gymnastics Uneven Bars


## Gymnastics floors



Watch my physical education website: www.ap-physical-literacy.com
My YouTube channel : rajagola (All marking videos)

## 345 method

Calculation of Pythagoras theorem : 345 method Method-(1) $345: 3 \times 2=6,4 \times 2=8,5 \times 2=10(6,8,10)$ Method-(2) $345: 3 \times 3=9,4 \times 3=12,5 \times 3=15(9,12,15)$
Method-(3) $345: 3 \times 4=12,4 \times 4=16,5 \times 4=20(12,16,20)$
Method-(4) $345: 3 \times 5=\mathbf{1 5}, 4 \times 5=\mathbf{2 0}, 5 \times 5=\mathbf{2 5}(\mathbf{1 5 , 2 0 , 2 5 )}$
You multiple single number with 345 triplets. After multiple of triplets you can choose any method based on length and width of the fields, tape etc First of all before used this method draw a any straight line then you can used above methods in anyone. Especially this method more use for large courts and track marking.



Draw a Hockey field with 345 method



Draw a 400 m track inner with 345 method
Rajesh Agola


YouTube channel- rajagola ( Marking videos)
Website: www.ap-physical-liferacy.com
(My Physical education website)
My app : PE PORTAL in play store

Draw a 400 m track inner with 345 method


Draw a 200 m track inner with 345 method Rajesh Agola


Draw a 200m track inner with 345 method Rajesh Agola


YouTube channel- rajagola (Marking videos)
Website: www.ap-physical-literacy.com
(My Physical education website)

## Official games websites

| GAMES | INDIAN GAMES ASSOCIATIONS | INTERNATIONAL GAMES ASSOCIATIONS |
| :--- | :--- | :--- |
| ARCHERY | www.indianarchery.info | worldarchery.org |
| ATHLETICS | indianathletics.in | www.iaaf.org |
| BADMINTON | www.badmintonindia.org | bwfbadminton.com |
| BASEBALL | www.baseballindia.org | www.wbsc.org |
| BASKETBALL | www.basketballfederationindia.org | www.fiba.basketball |
| BOXING | indiaboxing.in | www.aiba.org |
| CARROM | www.indiancarrom.co.in | www.icfcarrom.com |
| CHESS | aicf.in | www.fide.com |
| CRICKET | www.bcci.tv | www.icc-cricket.com |
| CYCLING | cyclingfederationofindia.org | www.uci.ch |
| FENCING | fencingassociationofindia.com | fie.org |
| FOOTBALL | www.the-aiff.com | www.fifa.com |
| GYMNASTICS | indiagymnastics | www.fig-gymnastics.com |
| HANDBALL | handballindia.blogspot.in | www.ihf.info |
| HOCKEY | hockeyindia.org | www.fih.ch |
| JUDO | www.onlinejfi.org | www.ijf.org |
| KABADDI | indiankabaddi.org | worldkabaddi.org |
| KHO-KHO | khokhofederation.in | www.khokho.co.in |
| POWER <br> LIFTING | www.indianpowerliftingfederation.com | www.powerlifting-ipf.com |
| RUGBY | indiarugby.com | www.worldrugby.org |
| SEPAKTAKRAW | sepaktakrawindia.com | www.sepaktakraw.org |
| SHOOTING | www.thenrai.in | www.issf-sports.org |
| SOFTBALL | www.softballindia.com | www.wbsc.org |
| SWIMMING | swimming.org.in | www.fina.com |
| TABLE TENNIS | www.ttfi.org | www.ittf.com |
| TEAKWONDO | www.tfiindia.com | www.taekwondoitf.org |
| TENNIKOIT | www.indiantennikoit.com | www.itftennis.com |
| TENNIS | www.aitatennis.com | intthrowballfed |
| THROWBALL | www.throwballfederationofindia.com | www.fivb.org |
| VOLLEYBALL | volleyballindia.com/html | www.iwf.net |
| WEIGHT <br> LIFTING | www.iwlf.in | unitedworldwrestling.org |
| WRESTLING | www.wrestlingfederationofindia.com | www.yogafederationofindia.com |
| YOGA | wwarnationalyogafederation.net |  |
|  | waternational.htmI |  |


| Website | Available information |
| :--- | :--- |
| $125.20 .160 .197 / S G F ~(A P ~ S G F ~-~ t h r o u g h ~ C S E ~$ <br> website) | Ap school games calendar, results, schedules etc |
| www.sgfibharat.com | National school games calendar, results, schedules, sgfi <br> registration form etc |
| www.isfsports.org | International school games calendar, results, schedules |
| sportsauthorityofindia.nic.in | NSNIS regular and six weeks notifications, Khelo India <br> tournaments, Indian sports schemes, national coach job <br> notifications etc |
| apsports.in (AP SAAP) | Khelo India Schedules, Ap Sports policy, sports school selection <br> notifications, caches contacts, coach job notifications, saap <br> leagues etc |
| www.ap-physical-literacy.com <br> PE PORTAL app (Play store) | Ap physical literacy information, All games websites, Track <br> and field, games marking videos and pdf book, ap go's, all <br> games associations latest rules and regulation pdf books etc |
| www.kabaddirao.com | Kabaddi skills |
| www.khokhonms.org | Kho-kho skills |

## Measurement conversion

| Lengths | Weights |
| :---: | :---: |
| Metric | Metric |
| 1 centimeter $=10$ millimeters (mm) | 1 gram $=1000$ milligrams (mg) |
| 1 meter = 100 centimeters (cm) | 1 kilogram = 1000 grams (g) |
| 1 kilometer = 1000 meters (m) | 1 tonne (megagram-Mg) = 1000 kilograms (kg) |
| Standard | Standard |
| 1 foot = 12 inches (in) | 1 ounce = 16 drams (dr) |
| 1 yard $=3$ feet (ft) | 1 pound = 16 ounces (oz) |
| 1 yard $=36$ inches | 1 hundred weight = 100 pounds (lb) |
| 1 mile = 1760 yards (yd) | 1 ton $=20$ hundred weight |
| Metric to Standard | 1 ton = 2000 pounds |
| 1 millimeter $=0.03937$ inches | Metric to Standard |
| 1 centimeter $=0.39370$ inches | 1 gram $=0.035274$ ounces |
| 1 meter $=39.37008$ inches | 1 kilogram $=2.20462$ pounds |
| 1 meter $=3.28084$ feet | 1 kilogram $=35.27396$ ounces |
| 1 meter = 1.09361 yards | $1 \mathrm{~g}=0.035274 \mathrm{oz}$ |
| 1 kilometer $=1093.6133$ yards | $1 \mathrm{~kg}=2.20462 \mathrm{lb}$ |
| 1 kilometer $=0.62137$ miles (mi) | $1 \mathrm{~kg}=35.27396 \mathrm{oz}$ |
| Standard to Metric | Standard to Metric |
| 1 inch $=2.54$ centimeters | 1 ounce $=28.34952$ grams |
| 1 foot $=30.48$ centimeters | 1 pound $=453.59237$ grams |
| 1 yard $=91.44$ centimeters | 1 pound $=0.45359$ kilograms |
| 1 yard $=0.9144$ meters | $1 \mathrm{oz}=28.34952 \mathrm{~g}$ |
| 1 mile $=1609.344$ meters | $1 \mathrm{lb}=453.59237 \mathrm{~g}$ |
| 1 mile $=1.609344$ kilometers | $1 \mathrm{lb}=0.45359 \mathrm{~kg}$ |

## STADIUMS in INDIA \& WORLD

| Australia | Manuka Oval | Canberra |
| :---: | :---: | :---: |
|  | Adelaide Oval | Adelaide |
|  | Telstra Dome | Melbourne |
|  | Bundaberg Rum Stadium | Cairns |
|  | W.A.C.A. Ground | Perth |
|  | Sydney Cricket Ground | Sydney |
|  | Melbourne Cricket Ground | Melbourne |
|  | Marrara Cricket Ground | Darwin |
| England | The Brit Oval | London |
|  | St Lawrence Ground | Canterbury |
|  | Trent Bridge | Nottingham |
|  | Old Trafford | Manchester |
|  | Sophia Gardens | Cardiff |
|  | Headingley | Leeds |
|  | Lord's | London |
|  | Edgbaston | Birmingham |
| Bangladesh | Bangabandhu National Stadium | Dhaka |
|  | Chittagong Stadium | Chittagong |
|  | Basin Reserve | Wellington |
|  | Eden Park | Auckland |
|  | Jade Stadium | Christchurch |
|  | John Davies Oval | Queenstown |
|  | McLean Park | Napier |
| Pakistan | Arbab Niaz Stadium | Peshawar |
|  | Ayub National Stadium | Quetta |
|  | Gaddafi Stadium | Lahore |
| South Africa | Kingsmead | Durban |
|  | New Wanderers Stadium | Johannesburg |
|  | Newlands | Cape Town |
|  | St George's Park | Port Elizabeth |
|  | Centurion Super Sport Park | Pretoria |
| Sri Lanka | Colombo Cricket Club Ground | Colombo |
|  | Galle International Stadium | Galle |
|  | P.Saravanamuttu Stadium | Colombo |
|  | R.Premadasa Stadium | Colombo |
|  | Sinhalese Sports Club Ground | Colombo |
| West indies | Sabina Park Kingston | Jamaica |
|  | Antigua Recreation Ground St John's | Antigua |
|  | Guyana Cricket Stadium Georgetown | Guyana |
|  | Kensington Oval Bridgetown | Barbados |


|  | Mindoo Phillip Park Castries | St Lucia |
| :--- | :--- | :--- |
|  | Albion Sports Complex Berbice | Guyana |
|  | Bulawayo Athletic Club | Bulawayo |
|  | Harare Sports Club | Harare |
|  | Kwekwe Sports Club | Kwekwe |
|  | Queens Sports Club | Bulawayo |
| U A E | Sheikh Zayed Stadium | Abu Dhabi |
|  | Sharjah Cricket Stadium | Sharjah |

## INDIA

| State | City | Name of the stadium | Purpose of Stadium |
| :---: | :---: | :---: | :---: |
| Andhra Pradesh | Guntur-Amaravati | ANU Blue Synthetic Athletics track | Athletics |
|  | Visakhapatnam | Dr. Y.S. Rajasekhara Reddy ACA-VDCA Cricket Stadium | Cricket |
|  | Mangaligiri | Mangaligiri international cricket stadium | Cricket |
| Assam | Guwahati | Dr. Bhupen Hazarika Cricket Stadium | Cricket |
|  | Guwahati | Indira Gandhi Athletic Stadium | Football, Athletics |
|  | Silchar | Satindra Mohan Dev Stadium | Football |
|  | Guwahati | Jawaharlal Nehru Stadium | Sports and games |
| Bihar | Patna | Patliputra Sports Complex | Football |
|  | Siwan | Rajendra Stadium | Football |
| Chandigarh | Chandigarh | Sector 42 Stadium | Hockey |
| Chhattisgarh | Raipur | Shaheed Veer Narayan Singh International Cricket Stadium | Cricket |
|  | Rajnandgaon | International Hockey Stadium | Hockey |
| Delhi NCR | Delhi | Jawaharlal Nehru Stadium | Football |
|  | Delhi | Feroz Shah Kotla | Cricket |
|  | Delhi | Dhyan Chand National Stadium | Hockey |
|  | Delhi | Ambedkar Stadium | Football |
|  | Delhi | Chhatrasal Stadium | Sports and games |
| Bihar | Patna | Patliputra Sports Complex | Football |
|  | Rajendra Stadium | Football | Siwan |
| Chandigarh | Chandigarh | Sector 42 Stadium | Hockey |
| Chhattisgarh | Raipur | Shaheed Veer Narayan Singh International Cricket Stadium | Cricket |
|  | Rajnandgaon | International Hockey Stadium | Hockey |
| Delhi NCR | Delhi | Jawaharlal Nehru Stadium | Football |


|  | Delhi | Feroz Shah Kotla | Cricket |
| :---: | :---: | :---: | :---: |
|  | Delhi | Dhyan Chand National Stadium | Hockey |
|  | Delhi | Ambedkar Stadium | Football |
|  | Delhi | Chhatrasal Stadium | Sports and games |
| Goa | Margao | Fatorda Stadium | Football |
|  | Vasco da Gama | Tilak Maidan Stadium | Football |
|  | Taleigao | Dr Shyama Prasad Mukherjee Indoor Stadium | Sports and games |
| Gujarat | Ahmedabad | Sardar Vallabhbhai Patel Stadium | Cricket |
|  | Ahmedabad | The Arena | Football |
|  | Baroda | Moti Bagh Stadium | Cricket |
| Haryana | Hisar | Mahabir Stadium | Sports and games |
|  | Gurgaon | Tau Devi Lal Stadium | Cricket, Football |
| Himachal Pradesh | Dharamshala | HPCA Cricket Stadium | Cricket |
|  | Una | Indira Gandhi Stadium | Cricket |
| Jammu and Kashmir | Srinagar | Bakhshi Stadium | Football |
|  | Sri Nagar | Sher-i-Kashmir Stadium | Cricket |
| Jharkhand |  |  |  |
|  | Ranchi | Birsa Munda Athletics Stadium | Athletics |
|  | Jamshedpur | JRD Tata Sports Complex | Football |
|  | Ranchi | Birsa Munda Hockey Stadium | Hockey |
| Karnataka | Bangalore | M. Chinnaswamy Stadium | Cricket |
|  | Bengaluru | Sree Kanteerava Stadium | Football |
| Kerala | Kochi | Jawaharlal Nehru Stadium | Cricket, Football |
|  | Kollam | Lal Bahadur Shastri Stadium | Football, Athletics |
|  | Kochi | Rajiv Gandhi Indoor Stadium | Multi-purpose |
|  | Palakkad | Fort Maidan | Football |
| Madhya Pradesh | Indore | Holkar Cricket Stadium | Cricket |
|  | Gwalior | Captain Roop Singh Stadium | Cricket |
|  | Bhopal | Aishbagh Stadium | Hockey |
|  | Neemuch | Dr. Rajendra Prasad Football Stadium | Football |
|  | Indore | Emerald High School Ground | Cricket |
| Maharashtra |  |  |  |
|  | Nagpur | Vidarbha Cricket Association Stadium | Cricket |
|  | Mumbai | Wankhede Stadium | Cricket |


|  | Thane | Dadaji Kondadev Stadium | Football |
| :---: | :---: | :---: | :---: |
| Manipur | Imphal | Khuman Lampak Main Stadium | Football |
| Mizoram | Aizawl | Hawla Indoor Stadium | Basketball |
| NCR -Delhi | Delhi | Indira Gandhi Arena | Sports and games |
|  | Delhi | Talkatora Stadium | Sports and games |
| Odisha | Bhubaneswar | Biju Patnaik Hockey Stadium | Sports and games |
|  | Cuttack | Jawaharlal Nehru Indoor Stadium | Gymnastics |
|  | Bhubaneswar | Kalinga Stadium | Hockey |
|  | Cuttack | Barabati Stadium | Cricket |
| Punjab | Chandigarh | Sector 42 Stadium | Hockey |
|  | Sangrur | War Heroes Stadium | Hockey |
|  | Kapurthala | Guru Nanak Stadium | Field hockey |
| Rajasthan | Udaipur | Gandhi Ground | Multi-purpose |
|  | Jodhpur | Barkatullah Khan Stadium | Cricket |
|  | Jaipur | Sawai Mansingh Stadium | Cricket |
| Sikkim | Namchi | Baichung Stadium | Football |
| Tamil Nadu | Chennai | Chennai Jawaharlal Nehru Stadium | Football |
|  | Madurai | MGR Race Course Stadium | Multi-purpose |
| Telangana | Hyderabad | G. M. C. Balayogi Athletic Stadium | Cricket and Athletics |
|  | Hyderabad | Lal Bahadur Shastri Stadium | Cricket |
| Tripura | Agartala | Maharaja Bir Bikram College Stadium | Cricket |
| Uttar Pradesh | Greater Noida | Buddh International Circuit | Auto Racing |
|  | Kanpur | Green Park Stadium | Cricket |
|  | Lucknow | Dhyan Chand Astroturf Stadium | Hockey |
|  | Greater Noida | Greater Noida Cricket Stadium | Cricket |
|  | Agra | Eklavya Sports Stadium | Cricket |
| Uttarakhand | Dehradun | Rajiv Gandhi International Cricket Stadium | Cricket |
| West Bengal | Kolkata | Salt Lake Stadium | Football |
|  | Kolkata | Eden Gardens | Cricket |
|  | Siliguri | Kanchenjunga Stadium | Football |
|  | Kolkata | Mohun Bagan Ground | Football |

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Notes

