

ATHLETIC TRACK & COURTS MARKING HANDBOOK PDF RAJESH AGOLA

You Tube: rajagola videos (Marking videos)

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400m track marking plan

2 Straight lines 84.39+84.39=168.78m 168.78m-400m=231.22m(2 curves)

 $2\pi r = 231.22m$

 $r = 231.22x7 \div 44$

r = 36.80 m RDR

- 30 cm

= 36.50m CDR

Diagonal distance calculation – Pythagoras theorem

$$AB^2 + BC^2 = AC^2$$

AB= 84.39m, BC= 36.50m

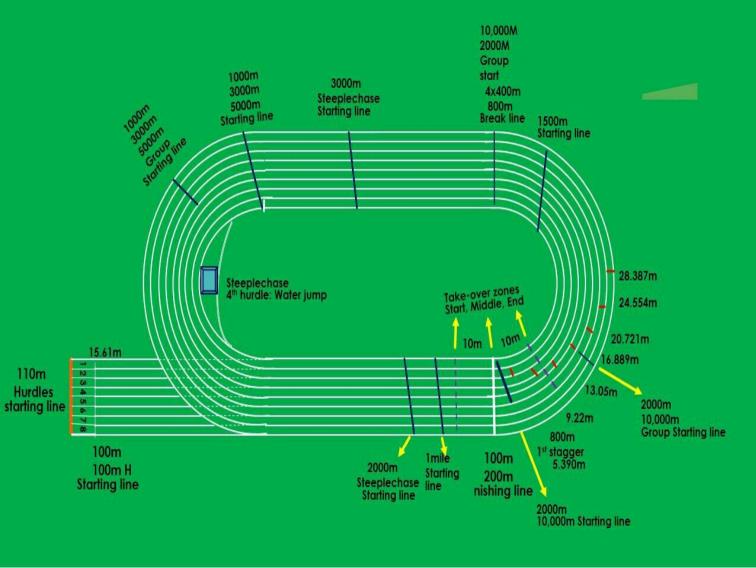
 $\sqrt{84}$. 39x84.39+36.50X36.50

 $\sqrt{7121}$. 672+1332.25

 $\sqrt{8453}$. 922

= 91.945m Diagonal distance





200m track marking plan

2 Straight lines 40+40=80m

80m-200m=120m(2 curves)

 $2\pi r = 120m$

 $r = 120x7 \div 44$

r = 19.09 m RDR

- 20 or 30 cm

= 18.89m CDR

Diagonal distance calculation – Pythagoras theorem

$$AB^2 + BC^2 = AC^2$$

AB= 40m, BC= 19.09m

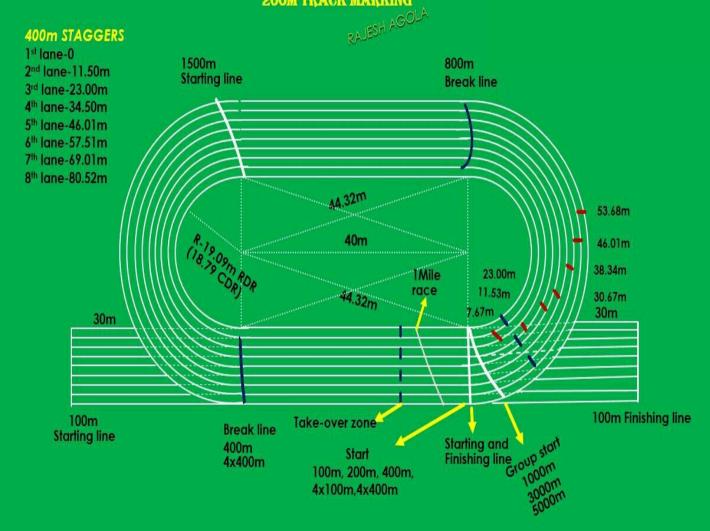
 $\sqrt{40x40+19.09X19.09}$

 $\sqrt{1600+364.4281}$

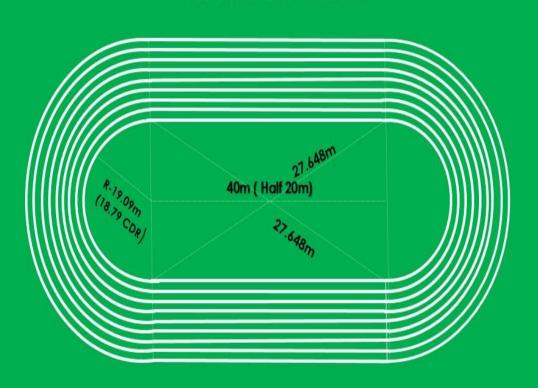
 $\sqrt{1964.4281}$

= 44.321m Diagonal distance

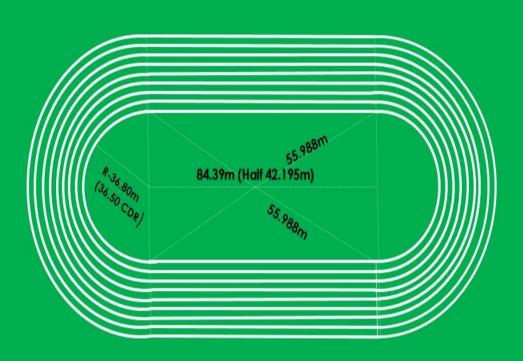
200M TRACK MARKING



200 TRACK EASY METHOD



400 TRACK EASY METHOD



200m running track total length of required field (TLR) Rajesh Agola NOTE: Diagonal distance based on center line of the field MINIMUM LENTH AND MINIMUM LENTH AND

44.2m

46.2m

48.2m

50.3m

52.4m

27.5m

27.9m

28.4m

28.9m

29.5m

8

8

8

5

6

8

9

40m

45m

50m

19.09m

17.50m

15.91m

42.5m 18.30m

47.5m 16.71m

18.89m

18.10m

17.30m

16.51m

15.71m

S.L NO	LENTH OF THE STRIGHT LINE	RUNNING DISTANCE RADIUS (RDR)	DISTANCE RADIUS (CDR)	FULL DIAGONAL DISTANCE	HALF DIAGONAL DISTANCE	NO OF LANES	REQUIRED FIELD (TLR-TOTAL LENTH OF REQUIRED FIELD- WITHOUT 100M)	REQUIRED FIELD (TLR-TOTAL LENTH OF REQUIRED FIELD- WITH 100M)	NO OF LANES	THE REQUIRED FIELD (TLR-TOTAL LENTH OF REQUIRED FIELD- WITHOUT 100M)	THE REQUIRED FIELD (TLR-TOTAL LENTH OF REQUIRED FIELD-WITH 100M)
1	30m	22.27m	22.07m	37.2m	26.7m	8	94.46m x 64.46m	100m x 64.46m	6	89.38m x 59.38m	100m x 59.38m
2	32.5m	21.48m	21.28m	38.9m	26.8m	8	95.38m x 62.88m	100m x 62.88m	6	90.3m x 57.8m	100m x 57.8m
3	35m	20.68m	20.48m	40.5m	26.9m	8	96.28m x 61.28m	100m x 61.28m	6	91.2m x 56.2m	100m x 56.2m
4	37.5m	19.89m	19.69m	42.4m	27.2m	8	97.74m x 59.7m	100m x 59.7m	6	92.66m x 54.62m	100m x 54.62m

98.1m x 58.1m

99.02m x 56.52m

99.92m x 54.92m

100.84m x 53.34m

101.74m x 51.74m

BREADTH OF THE

BREADTH OF THE

100m x 58.1m

100m x 56.52m

100m x 54.92m

100m x 53.34m

100m x 51.74m

MINIMUM LENTH

AND BREADTH OF

MINIMUM LENTH

AND BREADTH OF

93.02m x 53.02m 100m x 53.02m

93.94m x 51.44m 100m x 51.44m

94.84m x 49.84m 100m x 49.84m

95.76m x 48.26m 100m x 48.26m

96.66m x 46.66m 100m x 46.66m

200m track events

RAJESH AGOLA

```
200m event –full stagger ( All Athletes run their own lanes from starting line to finessing line.

(Lanes should not change)
```

```
400m event- 1 & \frac{1}{2} stagger (more then 3 teams )

(All Athletes after three curves cut with break line and goes to first lane )
```

```
400m event- \frac{1}{2} stagger + DE ( less then 4 teams ) (NOTE: DE- means DIAGONAL EXECESS ) 800m, 5000m, 10000m, events ARC START from starting line.
```

```
1500m event- ARC START from 1<sup>st</sup> curve line. ( 7 ½ rounds )
```

RELAYS in 200m track

```
4x100m - \frac{1}{2} stagger + DE (less then 4 teams ). 1 & \frac{1}{2} stagger (more then 3 teams )
```

```
( 1st leg Athletes after 1st curve (3 teams) (4 teams after 3 curves -3rd 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 1st lane)
```

```
4x400m - \frac{1}{2} stagger (less then 4 teams ). 1 & \frac{1}{2} stagger + DE (more then 3 teams )
```

```
( 1st leg Athletes after 1st curve (3 teams) (4 teams after 3 curves -3rd 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 1st lane )

NOTE: Calculation of break line. Ex: lanes 6 1/6 x 126m ( two curves ) =21m break line.
```

200m track staggers

L.NO	1/2 STAGGER	FULL SATGGER	1 ½ STAGGER	L.NO	DE
1	0	0	0	1	0
2	3.83m	7.66m	11.50m	2	0.02m
3	7.66m	11.53m	23.00m	3	0.08m
4	11.50m	23.00m	34.50m	4	0.18m
5	15.33m	30.67m	46.01m	5	0.32m
6	19.17m	38.34m	57.51m	6	0.49m
7	23.00m	46.01m	69.01m	7	0.77m
8	26.84m	53.68m	80.52m	8	1.03m

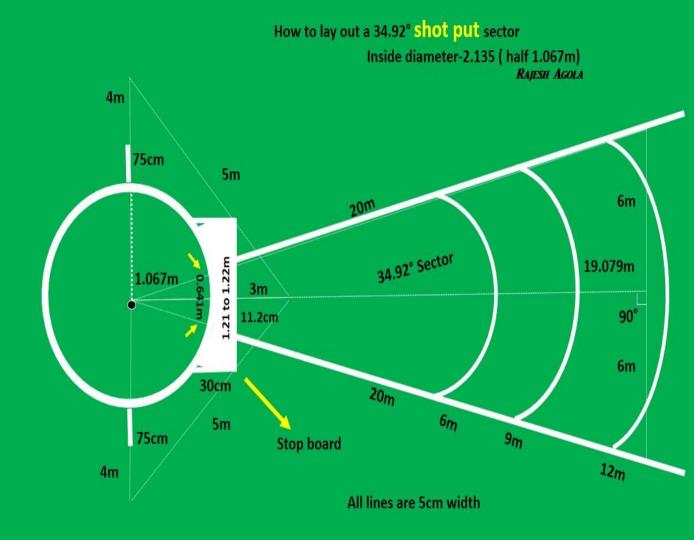
- > Calculation of DE (Diagonal excess) formula Pythagoras theorem AC=AB2+BC2
- > AB= Length of track straight line
- > BC= Width of the lane
- > For example : AB=straight line of the track 37m

BC= Width of the 2nd lane 1.22m (1st lane 0)

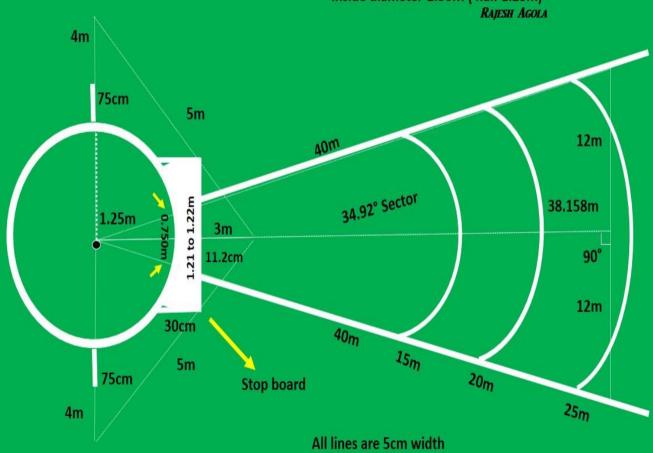
$$= \sqrt{37^2 + 1.22^2}$$

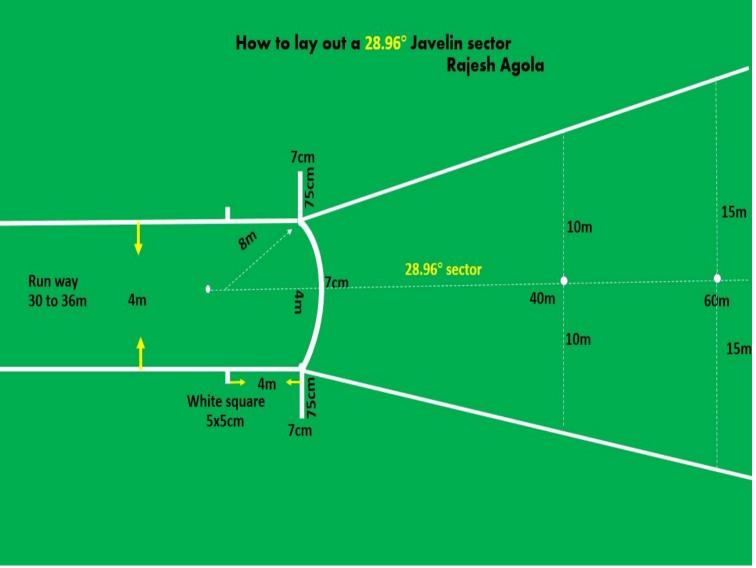
$$= \sqrt{1369 + 1.48}$$

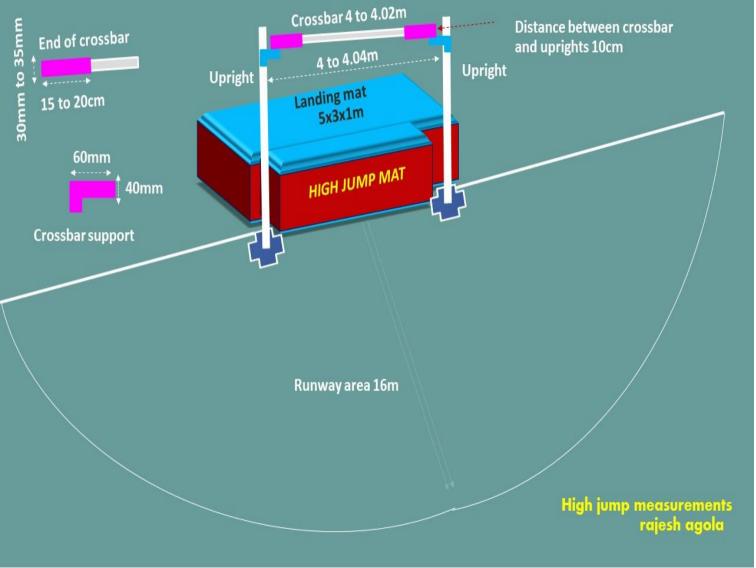
$$= \sqrt{1370.44}$$



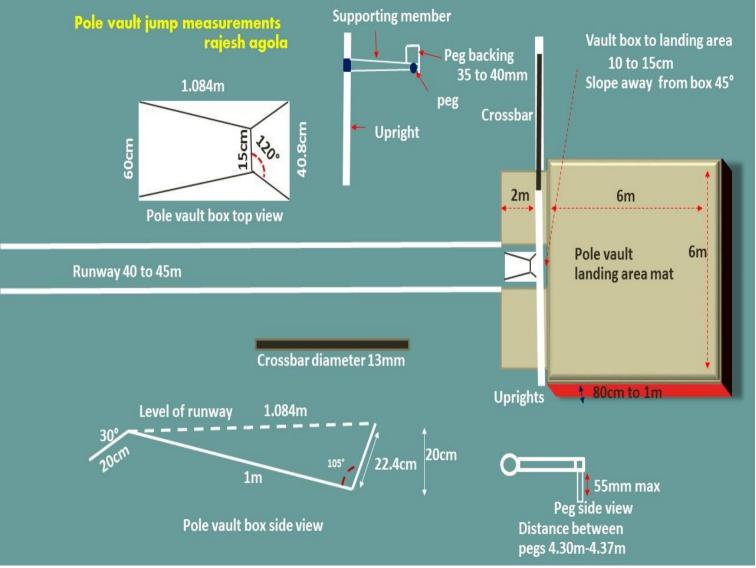
How to lay out a 34.92° **DISCUS THROW** sector Inside diameter-2.50M (half 1.25m)









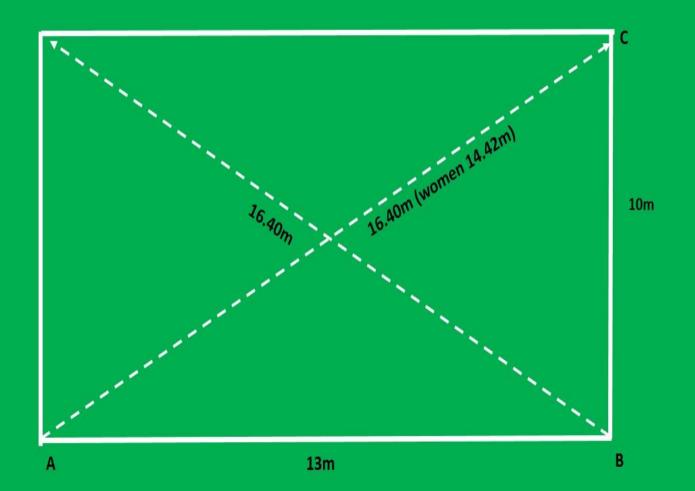


Name of the Game	Category Men/women	Length of the court	Width of the court	Full court diagonal	Half court diagonal
Kabaddi	Men	13m	10m	16.40m	11.926m
	Women	12m	8m	14.422m	10m
Kho-Kho	Men	27m	16m	31.4m	20.93m
	Women	23m	14m	26.92m	18.18m
Football	Men&Women	110m	64m	127.26m	84.71m
		100m	64m	118.726m	81.215m
		100m	50m	111.803m	70.7106m
Volleyball	Men&Women	18m	9m	20.124m	12.727
Handball	Men&Women	40m	20m	44.721m	28.284m
Badminton	Singles	13.40m	5.18m	14.366m	8.5m
	Doubles	13.40m	6.10m	14.723m	9.06m
Hockey	Men&Women	91.40m	55m	106.67m	71.508m
Ball badminton	Doubles	24m	6m	24.738m	13.416m
	Fivers	24m	12m	26.832m	16.970m
Throwball	Men&Women	18.30m	12.20m	21.993m	15.2499m
Basketball	Men&Women	28m	15m	31.764m	20.518m
Softball	Men&Women	18.29m	18.29m	25.865m	
Cricket	Men&Women	20.12m	3.05m	222	1222
Tennikoit	Singles	12.2m	4.6m	13.04m	7.64m
	Doubles	12.2m	5.5m	13.38m	8.21m
Sepaktakraw	Men&Women	13.4m	6.1m	14.72m	9.1m

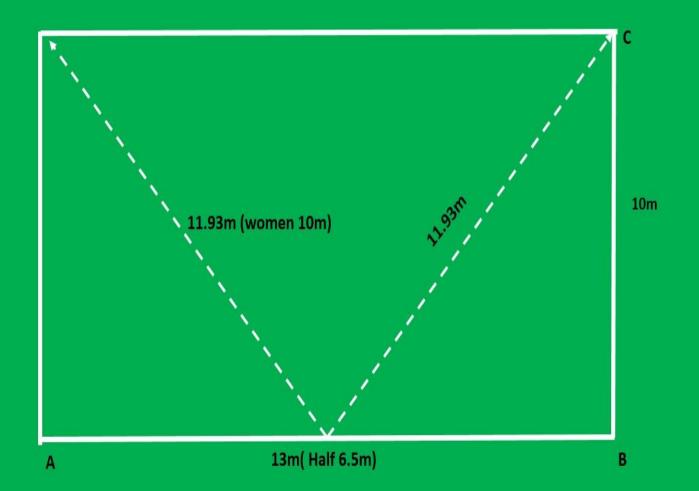
Kabaddi court marking plan

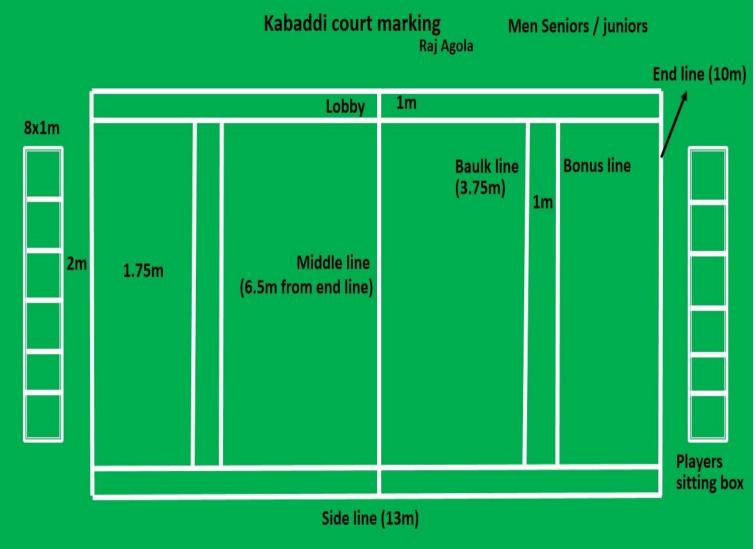
Kabaddi court: Men 13x10m Calculation of diagonal distance: Pythagoras theorem $AB^2 + BC^2 = AC^2$ AB=13m,BC=10m √13×13 + 10×10 √169+100 $\sqrt{269} = 16.401$ m Diagonal distance Half court diagonal distance calculation: AB=6.5m,BC=10m $\sqrt{6.5 \times 6.5 + 10 \times 10}$ $\sqrt{42.25+100} = 142.25$ $\sqrt{142.25}$ = 11.926m Diagonal distance Kabaddi court Women 12x8m Full court diagonal 14.422m. Half court diagonal 10m.

Kabaddi full court marking plan method-2 Men Seniors / juniors



Kabaddi half court marking plan method-2 Men Seniors / juniors







KHO-KHO COURT MARKING PLAN

Kho-Kho court: Men 27mx16m

Calculation of diagonal distance: Pythagoras theorem $AB^2 + BC^2 = AC^2$

AB=27m,BC=16m

 $\sqrt{27 \times 27} + 16 \times 16$

√729+256

 $\sqrt{985}$ = 31.4m Diagonal distance

Half court diagonal distance calculation: AB=13.5m,BC=16m

 $\sqrt{13.5 \times 143.5 + 16 \times 16}$

 $\sqrt{182.25+256} = 438.25$

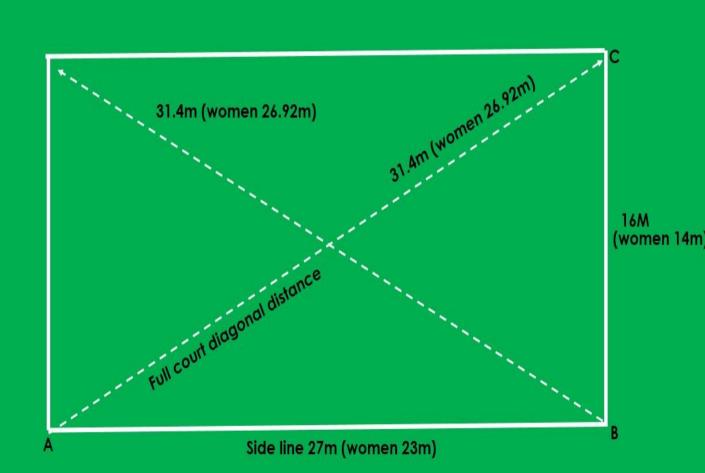
 $\sqrt{438.25}$ = 20.93m Diagonal distance

Kho-Kho court Women 23x14m

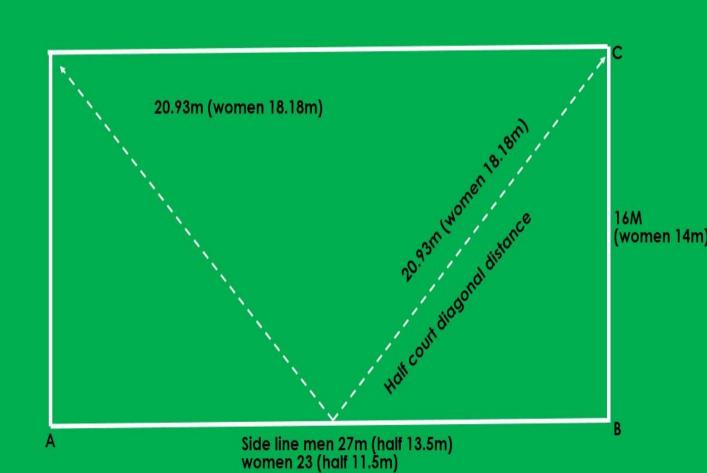
Full court diagonal 26.92m.

Half court diagonal 18.18m.

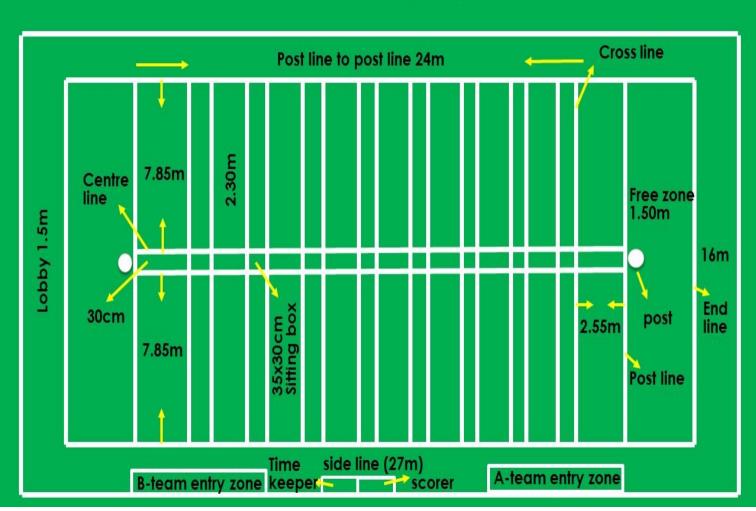
Kho Kho Men & Women court marking plan Rajesh Agola



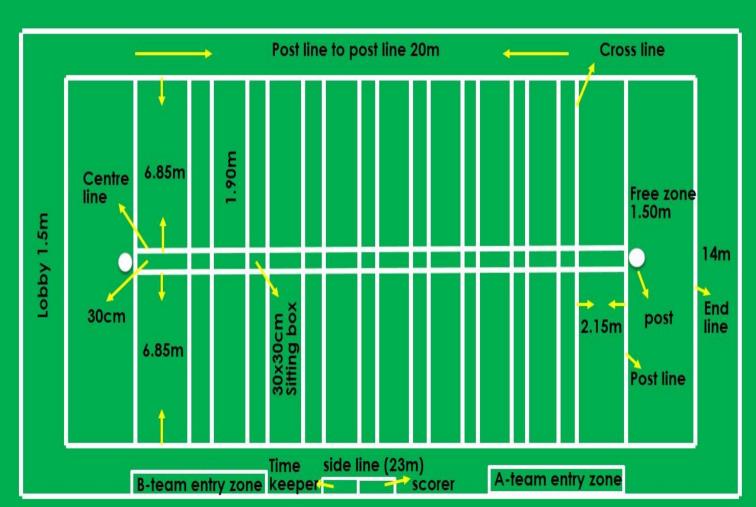
Kho Kho Men & Women court marking plan Rajesh Agola



Kho Kho Men court marking plan Rajesh Agola



Kho Kho Women court marking plan Rajesh Agola



FOOTBALL FIELD MARKING PLAN

Football field 110m x 64m (International)

Calculation of diagonal distance: Pythagoras theorem $AB^2 + BC^2 = AC^2$

AB=110m,BC=64m

√110×110 + 64×64

√12100+4096

 $\sqrt{16196} = 127.26$ m Diagonal distance

Half court diagonal distance calculation: AB=55m,BC=64m

 $\sqrt{55 \times 55} + 64 \times 64$

√3025+4096

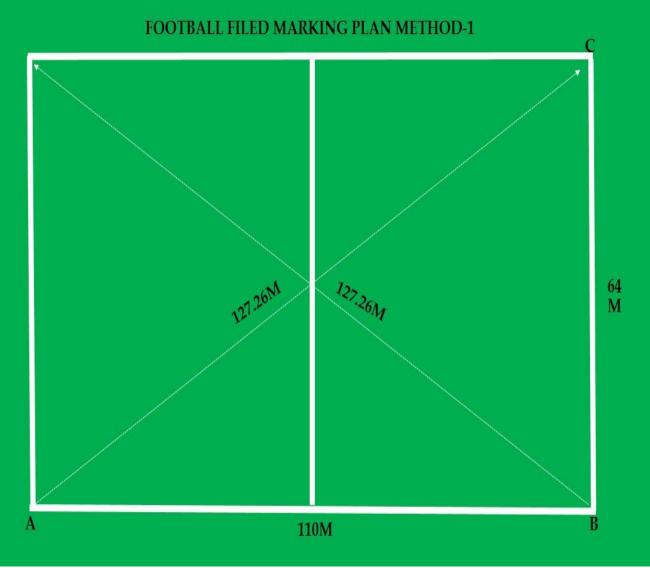
 $\sqrt{7121} = 84.386$ m Diagonal distance

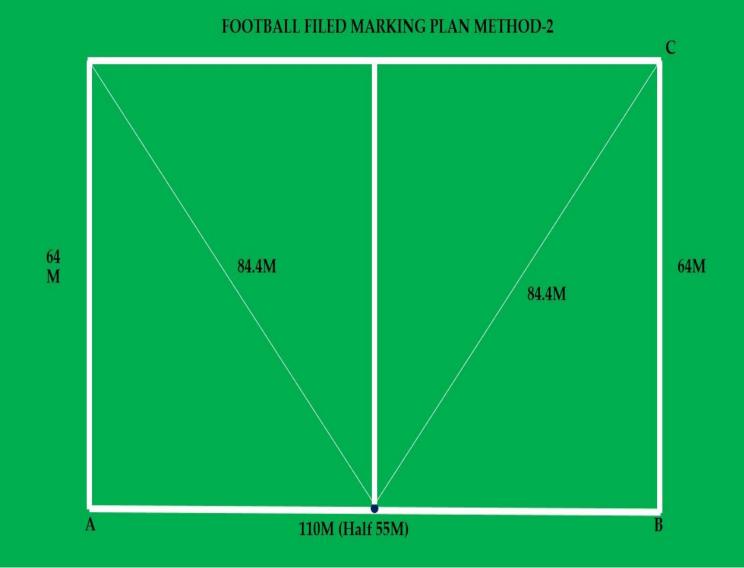
Minimum field required for football

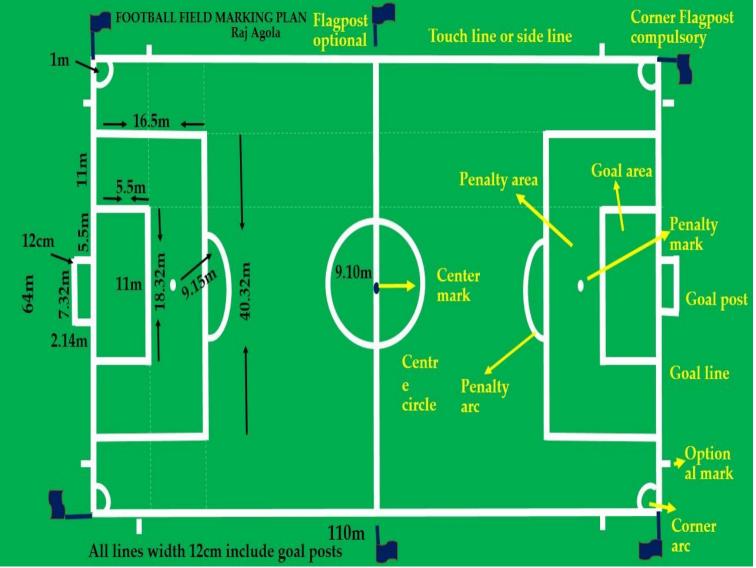
100m x64m(full field diagonal 118.726m, Half court diagonal 81.215m)

or

100m x 50m (full field diagonal 111.80m, Half court diagonal 70.71m)







Volley ball court marking plan

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Volley ball court: Men & Women 18x9m

Calculation of diagonal distance: Pythagoras theorem $AB^2 + BC^2 = AC^2$

AB=18m,BC=9m

 $\sqrt{18 \times 18 + 9 \times 9}$

 $\sqrt{324+81}$

 $\sqrt{405}$ = 20.124m Diagonal distance

Half court diagonal distance calculation: AB=9m,BC=9m



$$\sqrt{81+81} = 162$$

 $\sqrt{162}$ = 12.727m Diagonal distance

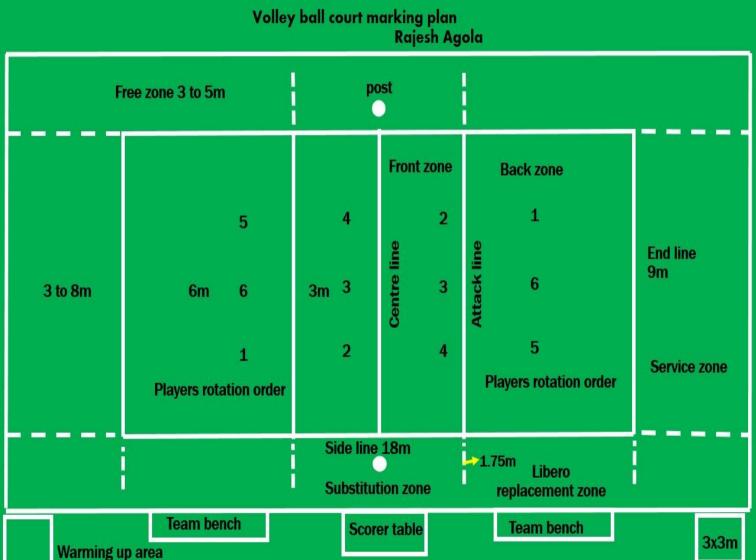


Volley ball court marking plan Rajesh Agola



Volley ball court marking plan Rajesh Agola





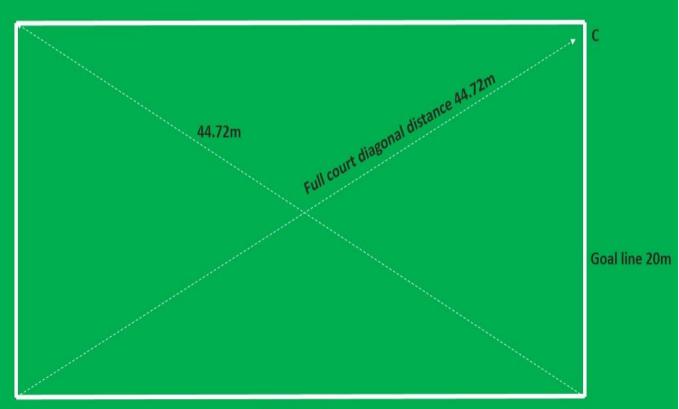
HANDBALL COURT MARKING

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```
Handball court: 40x20m
Calculation of diagonal distance: Pythagoras theorem AB^2 + BC^2 = AC^2
                                AB=40m,BC=20m
                                   \sqrt{40 \times 40 + 20 \times 20}
                                 \sqrt{1600+400=2000}
                                    \sqrt{2000} = 44.721m Diagonal distance
        Half court diagonal distance calculation: AB=20m,BC=20m
                                    \sqrt{20 \times 20 + 20 \times 20}
                                    \sqrt{400+400} = 800
                                      \sqrt{800} = 28.28m Diagonal distance
```

Handball court marking plan

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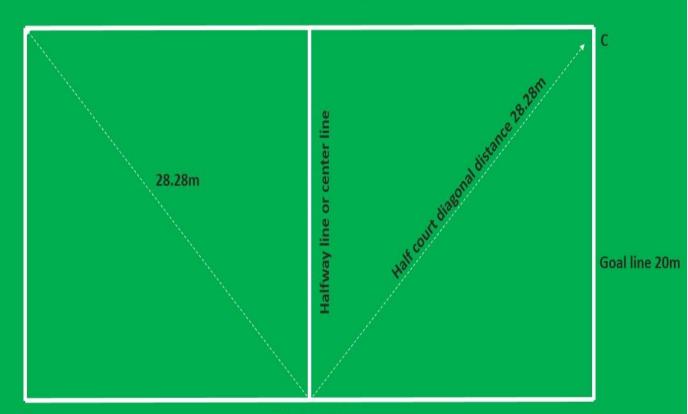


Side line 40m

B

Handball court marking plan

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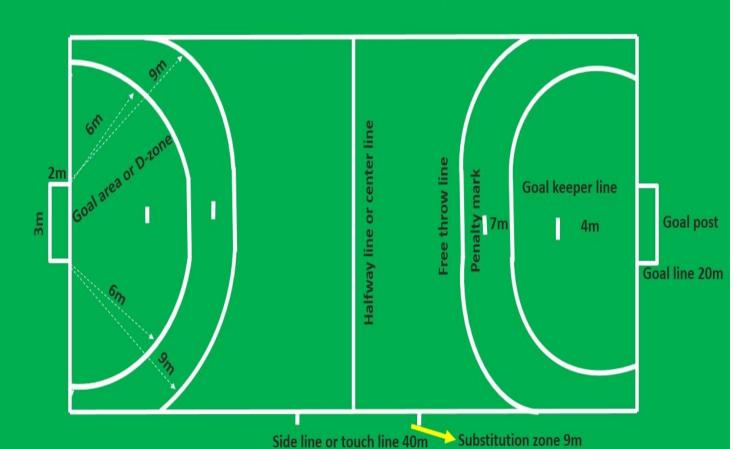


Δ

Side line 40m

В

Handball court marking plan Rajesh Agola



Shuttle court marking plan

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Shuttle court for doubles: 13.40x6.10m

Calculation of diagonal distance: Pythagoras theorem $AB^2 + BC^2 = AC^2$

AB = 13.40 m, BC = 6.10 m

 $\sqrt{13.40 \times 13.40 + 6.10 \times 6.10}$

√179.56+37.21

√216.77= 14.723m Diagonal distance

Half court diagonal distance calculation: AB=6.7m,BC=6.10m

 $\sqrt{6.7 \times 6.7 + 6.10 \times 6.10}$

 $\sqrt{44.89+37.21} = 82.1$

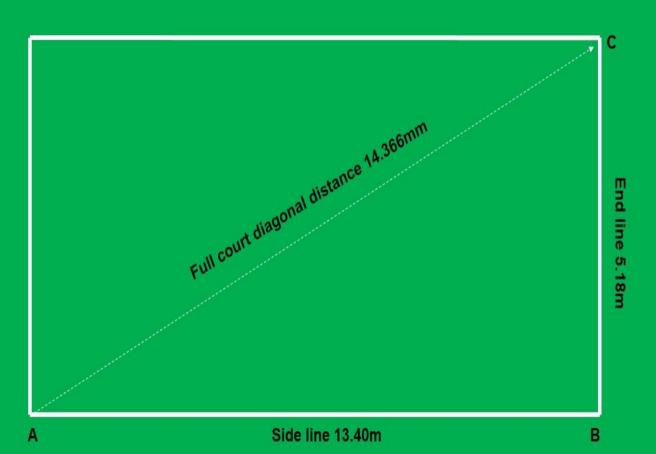
 $\sqrt{82.1}$ = 9.060m Diagonal distance

Shuttle court for singles 13.40x5.18m

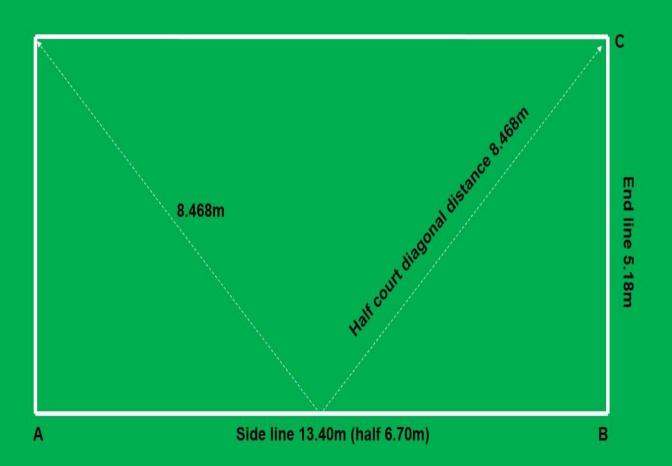
Full court diagonal 14.366m.

Half court diagonal 8.4689m.

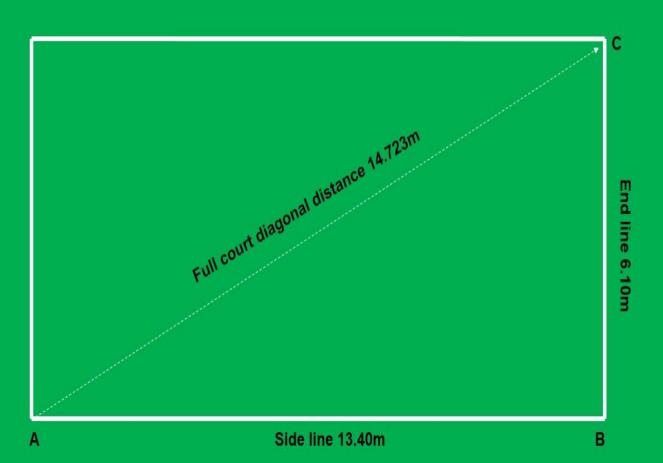
Shuttle full court for singles diagonal distance marking



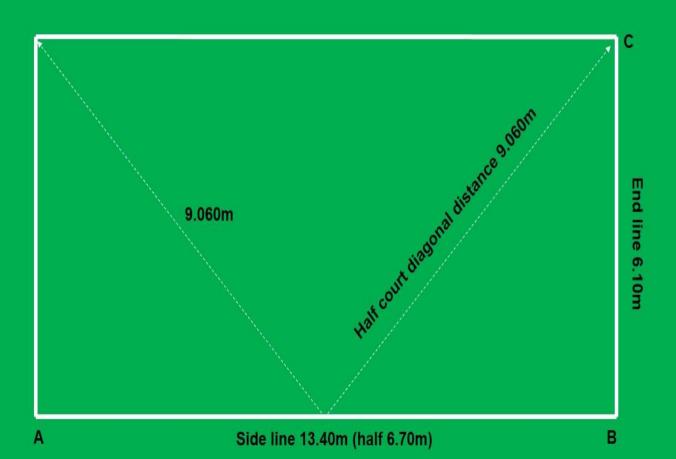
Shuttle half court for singles diagonal distance marking



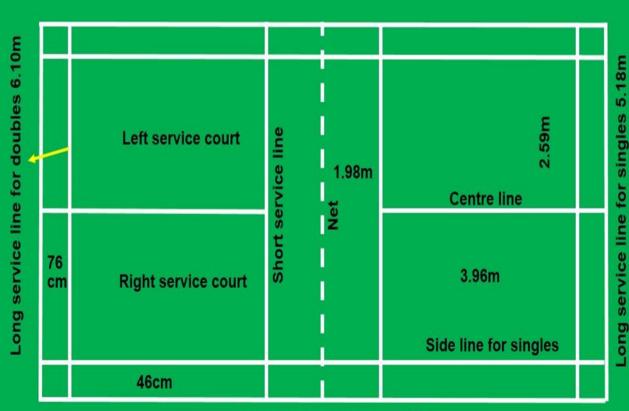
Shuttle full court for doubles diagonal distance marking



Shuttle half court for doubles diagonal distance marking

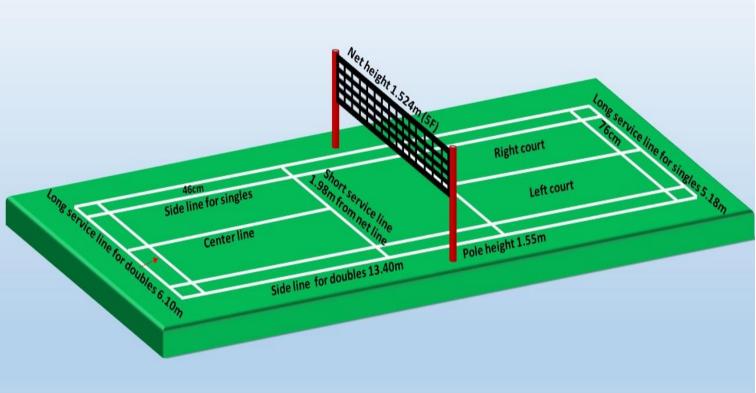


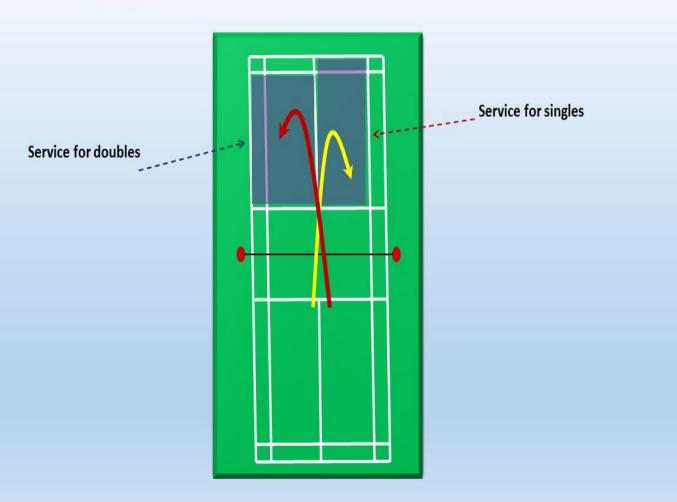
Batminton (shuttle) court marking plan RAJESH AGOLA

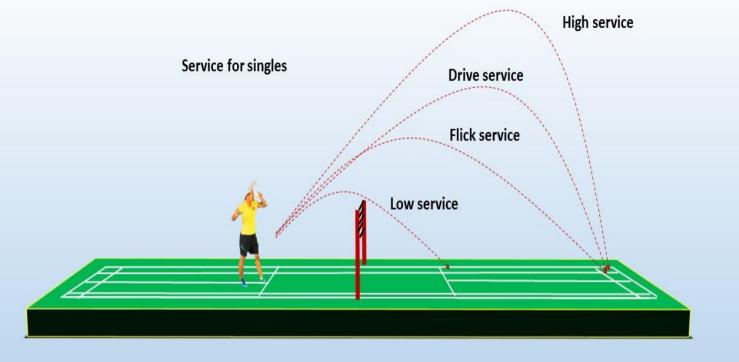


Side line for doubles 13.40m

3D BADMINTON COURT MARKING PLAN RAJESH AGOLA

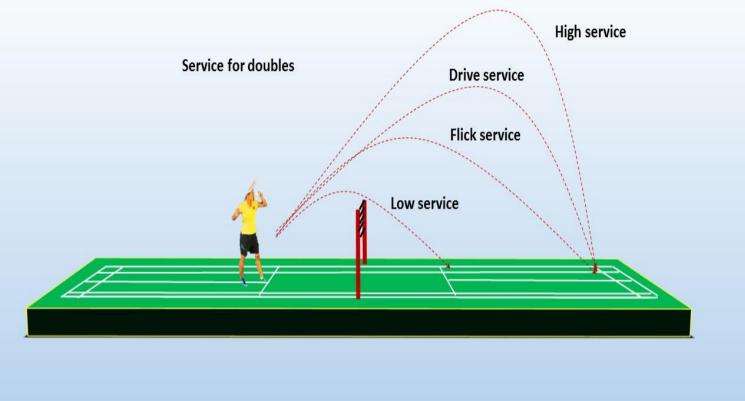


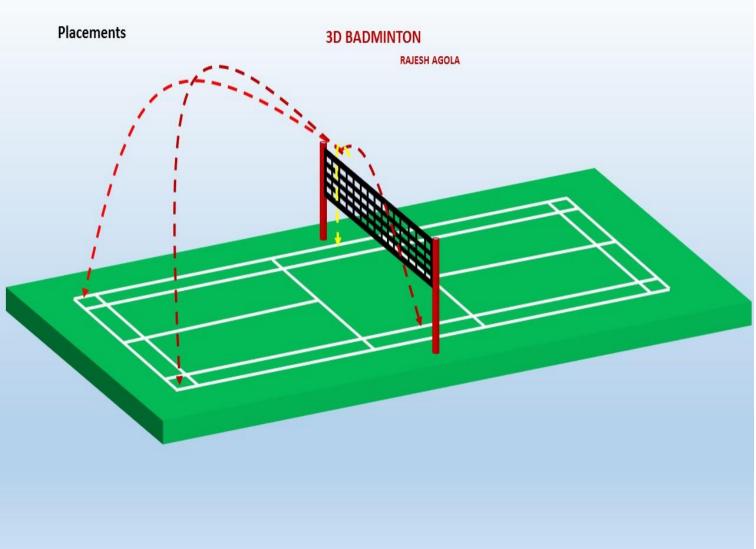




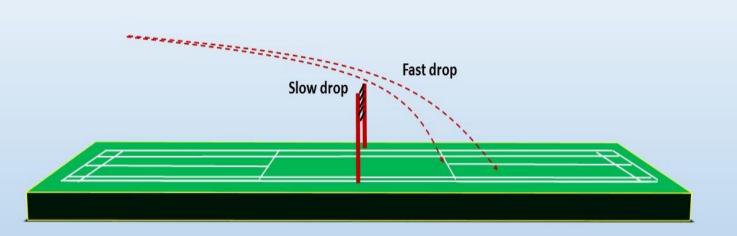
3D BADMINTON

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Drops



HOCKEY FIELD MARKING PLAN

HOCKET FIELD MAKKING FLAN

Hockey field: 91.40m x 55m

Calculation of diagonal distance: Pythagoras theorem $AB^2 + BC^2 = AC^2$

AB=91.40m,BC=55m

 $\sqrt{91.40 \times 91.40} + 55 \times 55$

√8353.96+3025

 $\sqrt{11378.96} = 106.67$ m Diagonal distance

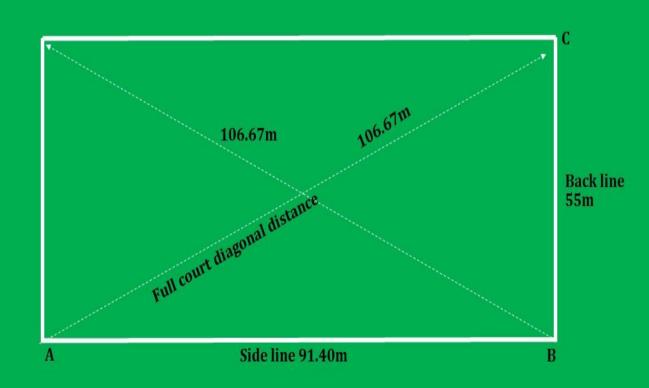
Half court diagonal distance calculation: AB=45.7m, BC=55m

 $\sqrt{45.7 \times 45.7 + 55 \times 55}$

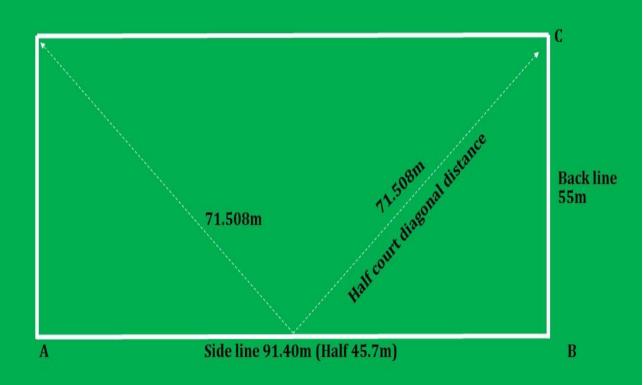
 $\sqrt{2088.49+3025}=162$

 $\sqrt{5113.49} = 71.508$ m Diagonal distance

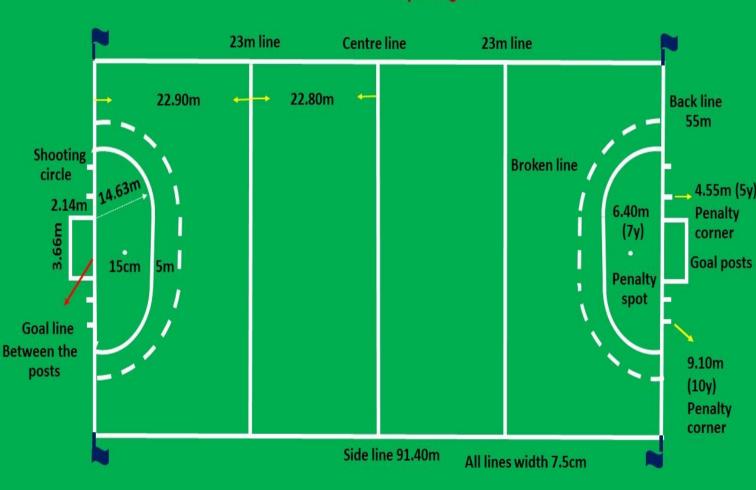
Hockey field marking plan Rajesh Agola



Hockey field marking plan Rajesh Agola



Hockey field marking plan Rajesh Agola



Ball badminton court marking plan

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Ball badminton court for fives: 24x12m

Calculation of diagonal distance: Pythagoras theorem $AB^2 + BC^2 = AC^2$

AB= 24m, BC= 12m

 $\sqrt{24} \times 24 + 12 \times 12$

√576+144

 $\sqrt{720}$ = 26.832m Diagonal distance

Half court diagonal distance calculation: AB=12m, BC=12m

 $\sqrt{12\times12}$ + $\overline{12\times12}$

 $\sqrt{144+144} = 288$

 $\sqrt{288}$ = 16.970m Diagonal distance

Ball badminton court for doubles 24x6m

Full court diagonal 24.738m.

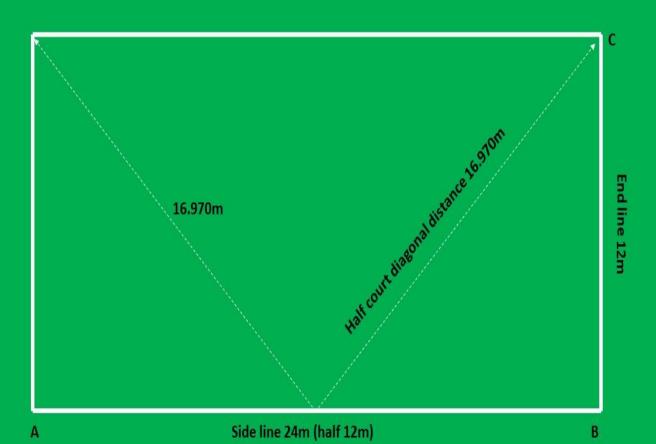
Half court diagonal 13.416m.

Ball badminton full court for fives diagonal distance marking

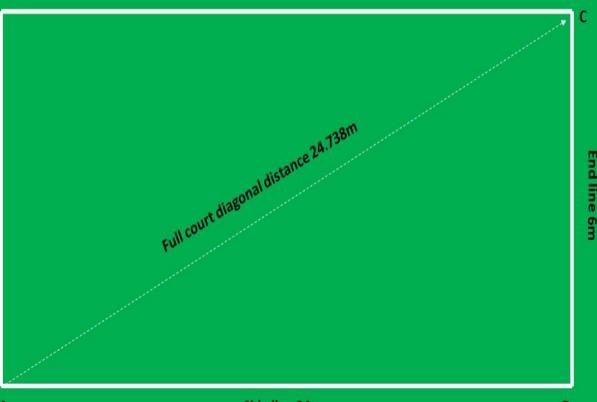


A Side line 24m

Ball badminton half court for fives diagonal distance marking

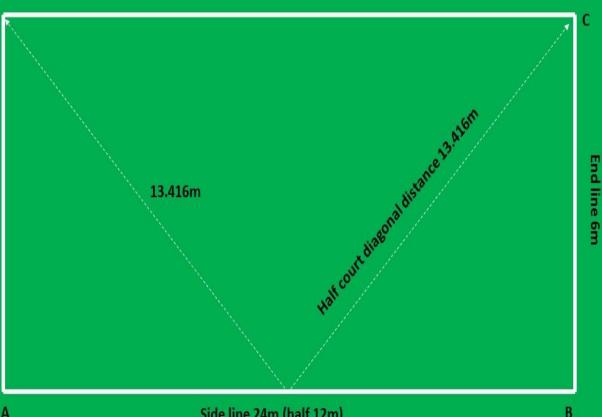


Ball badminton full court for doubles diagonal distance marking



A Side line 24m

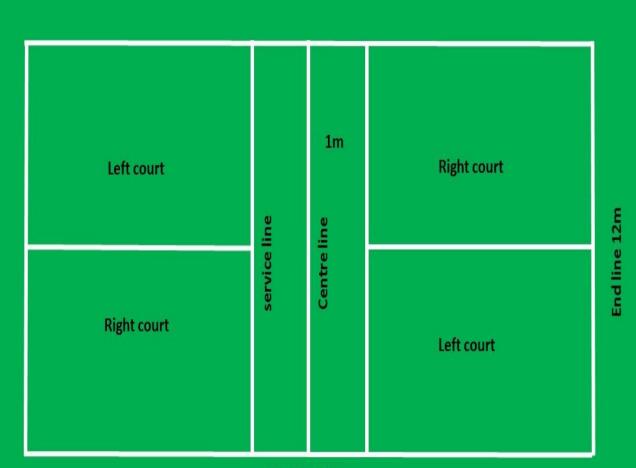
Ball badminton half court for doubles diagonal distance marking



Side line 24m (half 12m)

Ball badminton court marking pran

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Side line 24m

Throwball court marking plan

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Throwball court: 24x12m

Calculation of diagonal distance: Pythagoras theorem $AB^2 + BC^2 = AC^2$

AB= 18.30m, BC= 12.20m

 $\sqrt{18.30 \times 18.30 + 12.20 \times 12.20}$

√334.89+148.84

 $\sqrt{483.73}$ = 21.993m Diagonal distance

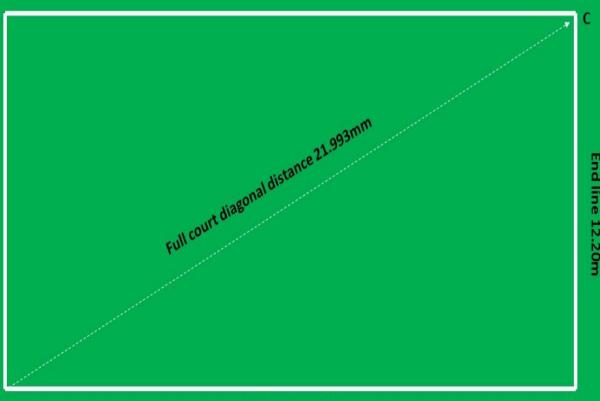
Half court diagonal distance calculation: AB=9.15m, BC=12.20m

 $\sqrt{9.15 \times 9.15 + 12.20 \times 12.20}$

 $\sqrt{83.722+148.84} = 232.562$

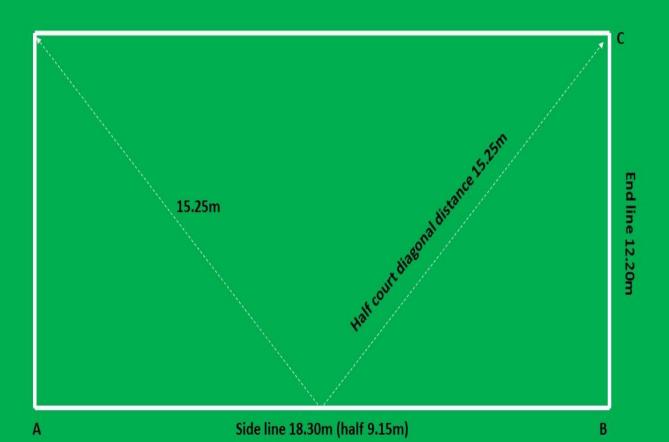
 $\sqrt{232.562} = 15.25$ m Diagonal distance

Throwball full court diagonal distance marking



A Side line 18.30m

Throwball half court diagonal distance marking



Throwball court marking plan

RAJESH AGOLA



Side line 18.30m

Basketball court marking plan Rasketball court marking plan Rajesh Agola

Rajesh Agola

Basketball court: 28x15m

Calculation of diagonal distance: Pythagoras theorem $AB^2 + BC^2 = AC^2$

AB=28m,BC=15m

 $\sqrt{28 \times 28 + 15 \times 15}$

√784+225

 $\sqrt{1009} = 31.764$ m Diagonal distance

Half court diagonal distance calculation: AB=9m,BC=9m

√14×14+ 15×15

√196+225

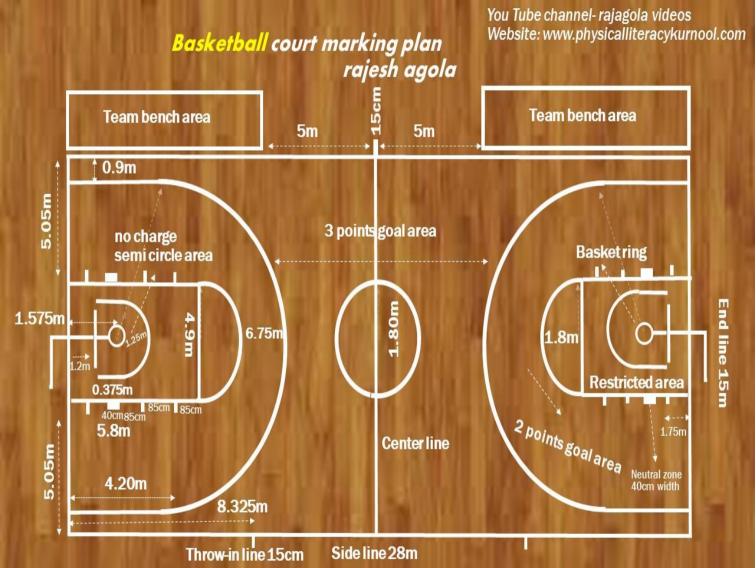
 $\sqrt{421} = 20.518$ m Diagonal distance

Basketball court marking plan Rajesh Agola



Basketball court marking plan Rajesh Agola





SOFTBALL DIAMOND MARKING PLAN

RAJESH AGOLA

SOFTBALL DIAMOND MEASUREMENTS:

Home plate: width-45cm, length-22cm, diagonal-31.8cm

Batter's box: length-2.2m, width-1m

Catcher's box: length-3.05m, width-2.75m

Home plate to pitcher rubber center point:13.11m

Pitcher rubber radius: 2.44m

Pitcher's plate-length: 60.96cm, width- 15.24cm

All base boxes: 38.1cm x 38.1cm (with double base box)

All base lines: 18.29m

Gross line: 18.29m from pitcher rubber center

Home plate to 2nd base diagonal distance: 25.865m (also 1st base to 3rd base)

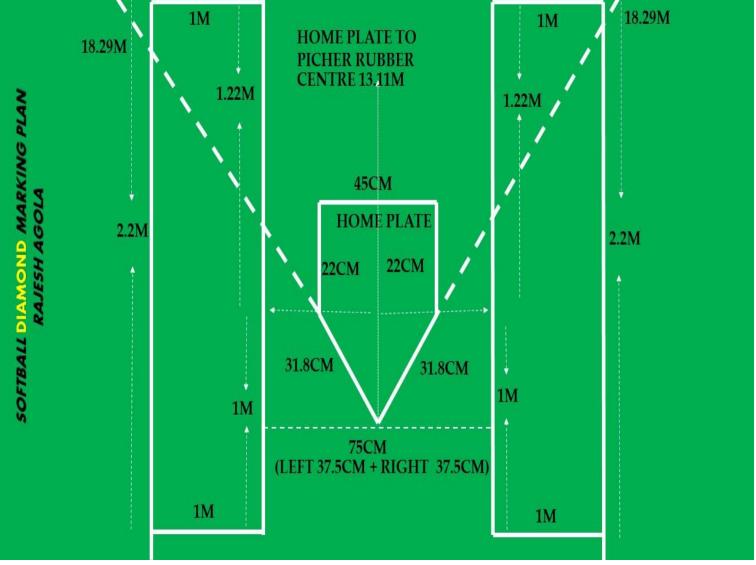
Coaches boxes 4.57m

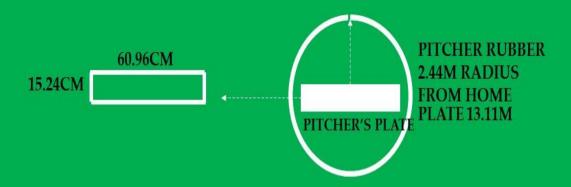
On-deck circles: 76cm radius

Catcher's box to back stop line and side fence line to foul line:

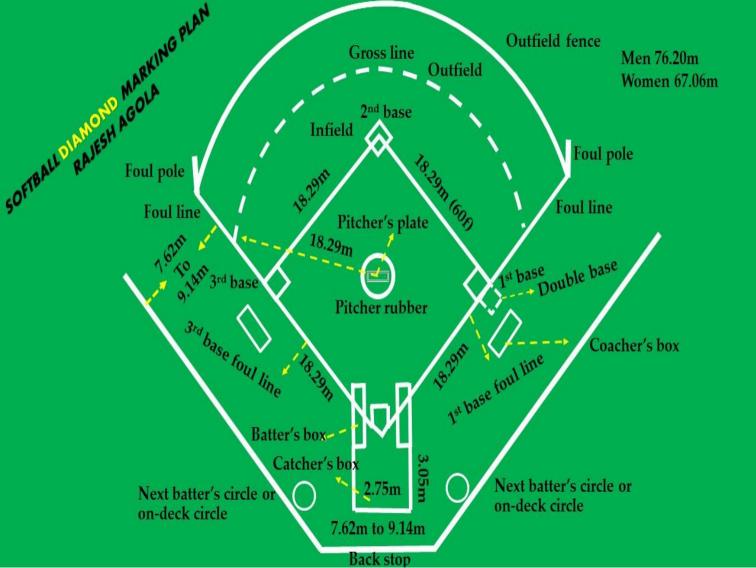
7.62m min to 9.14m max

Outfield fence: men 76.20m, women 67.06m

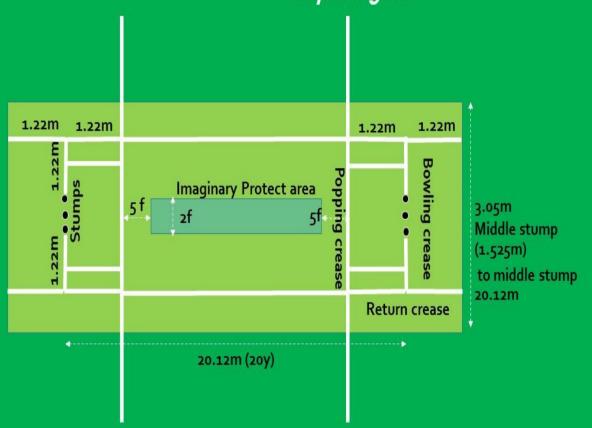




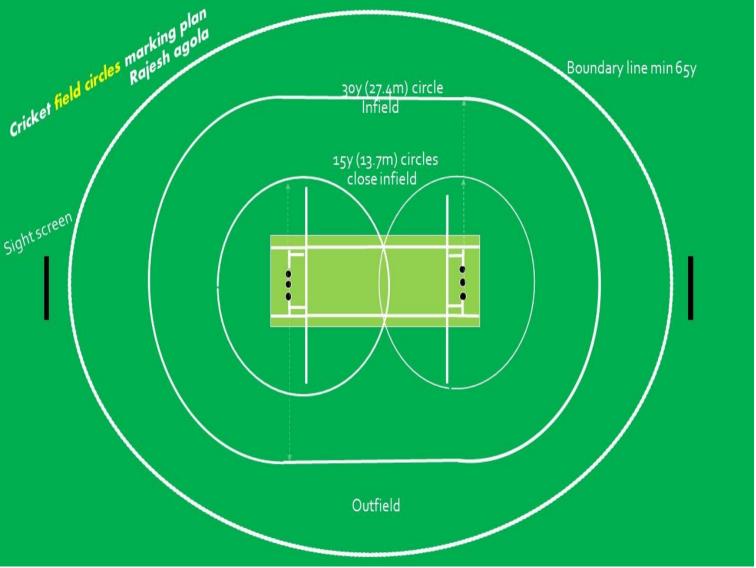




Cricket pitch marking plan Rajesh agola



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TENNIKOIT COURT MARKING PLAN RAJESHAGOLA

TENNIKOIT COURT FOR DOUBLES: 12.2X 5.5M

CALCULATION OF DIAGONAL DISTANCE: PYTHAGORAS THEOREM $AB^2 + BC^2 = AC^2$

AB=12.2M, BC=5.5M

√12.2×12.2+5.5×5.5 √148.84+30.25

√179.09=13.38M DIAGONAL DISTANCE

HALF COURT DIAGONAL DISTANCE CALCULATION: AB=12M, BC=12M

√6.1×6.1+5.5×5.5

√67.46= 8.21M DIAGONAL DISTANCE

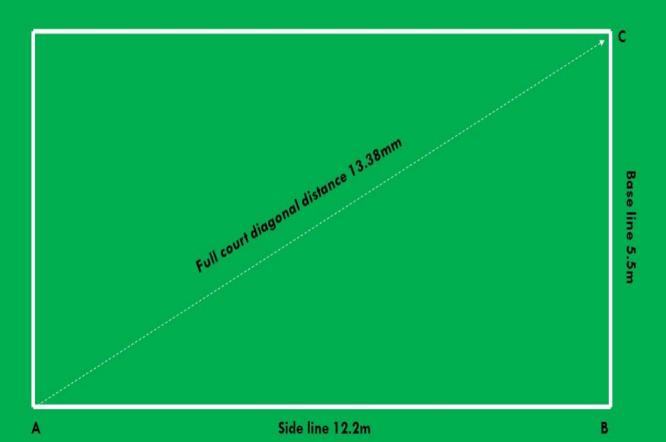
TENNIKOIT COURT FOR SINGLES 12.2 X 4.6M

 $\sqrt{37.21+30.25}$

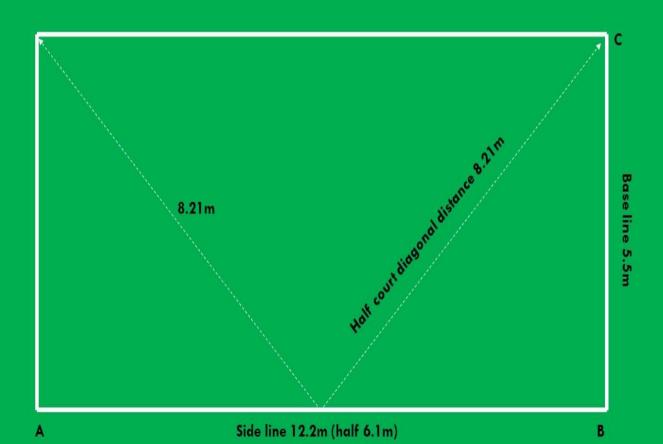
FULL COURT DIAGONAL 13.04M.

HALF COURT DIAGONAL 7.64M.

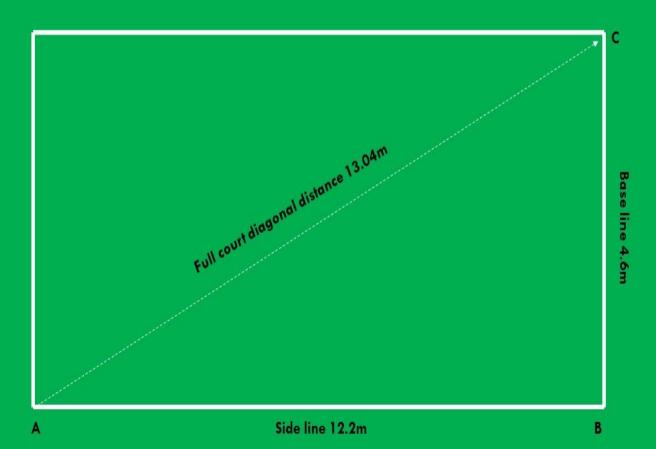
Tennikoit full court for doubles diagonal distance marking



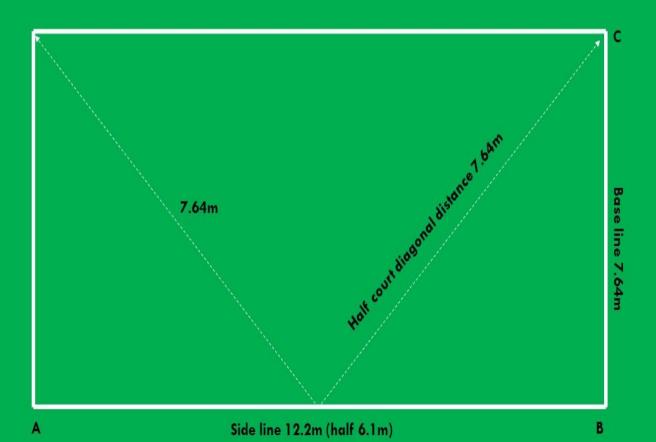
Tennikoit half court for doubles diagonal distance marking



Tennikoit full court for singles diagonal distance marking



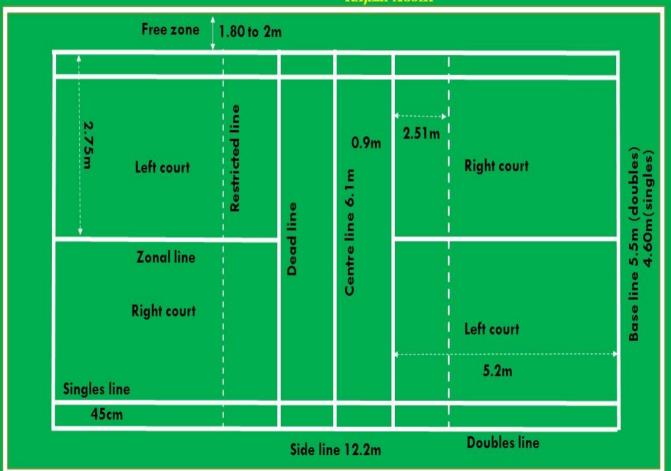
Tennikoit half court for singles diagonal distance marking



Tennikoit court marking plan

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RAJESH AGOLA



SEPAKTAKRAW COURT MARKING PLAN

RAJESH AGOLA

SEPAKTAKRAW COURT: 13.4 X 6.1M

CALCULATION OF DIAGONAL DISTANCE: PYTHAGORAS THEOREM $AB^2 + BC^2 = AC^2$

AB = 13.4M, BC = 6.1M

 $\sqrt{13.4 \times 13.4 + 6.1 \times 6.1}$

√179.56+37.21

√216.77=14.72M DIAGONAL DISTANCE

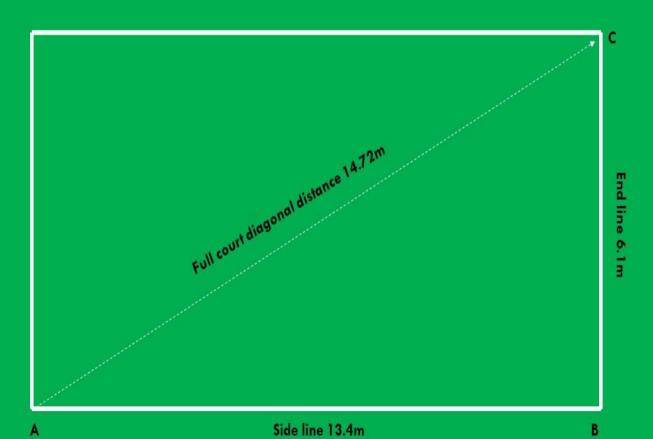
HALF COURT DIAGONAL DISTANCE CALCULATION: AB=6.7M, BC=6.1M

√6.7×6.7+6.1×6.1

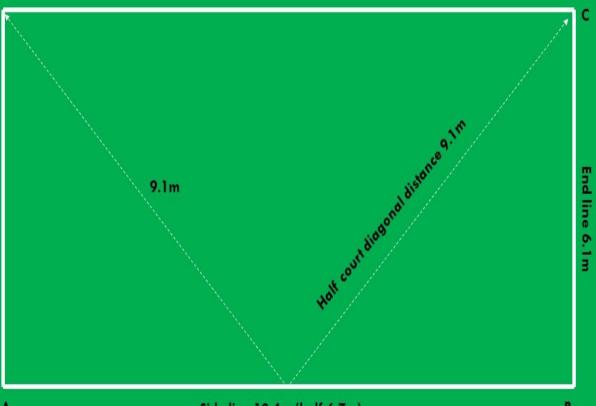
 $\sqrt{44.89+37.21} = 82.1$

 $\sqrt{82.1}$ = 9.1M DIAGONAL DISTANCE

Sepakatakraw full court diagonal distance marking



Sepakatakraw half court diagonal distance marking



A

Side line 13.4m (half 6.7m)

В

Sepaktakraw court marking plan RAJESH AGOLA

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