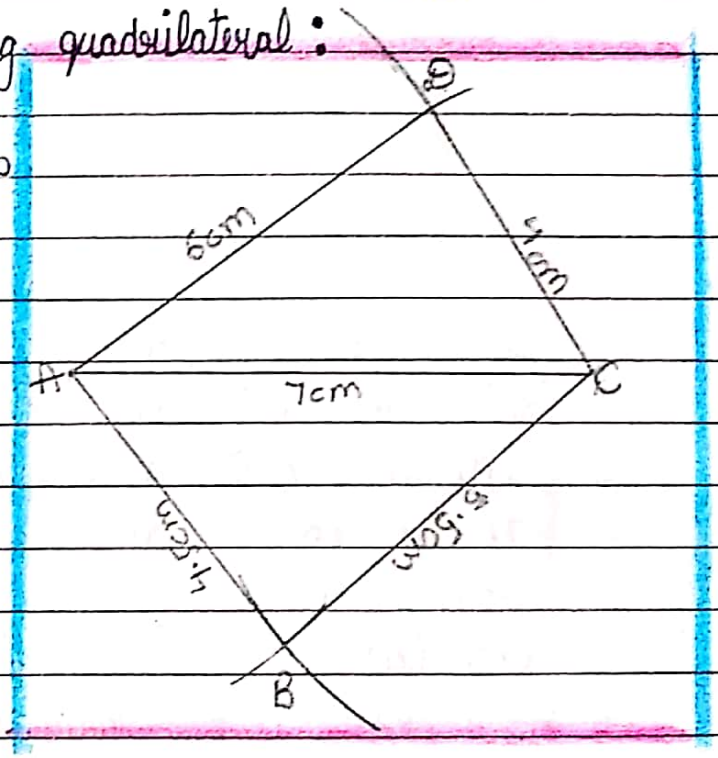
CHAPTER → 4

Practical Geometry

1. Construct the following quadrilateral :

(i) Quadrilateral ABCD Jump

AB = 4·5 cm
BC = 5·5 cm
CD = 4 cm
AD = 6 cm
AC = 7 cm



1. Draw a line segment AC = 7cm.
2. With A as centre and radius 4·5 cm, draw an arc (below AC).
3. With C as centre and radius 5·5 cm, draw another arc cutting the previous arc at B.
4. Join AB and BC.
5. With A as centre and radius 6cm, draw an arc (above AC).
6. With C as centre and radius 4cm, draw another arc cutting the previous arc at D.
7. Join AD and CD.

(ii) Quadrilateral JUMP

JU = 3·5 cm UM = 4cm MP = 5cm PJ = 4·5cm PU = 6·5cm

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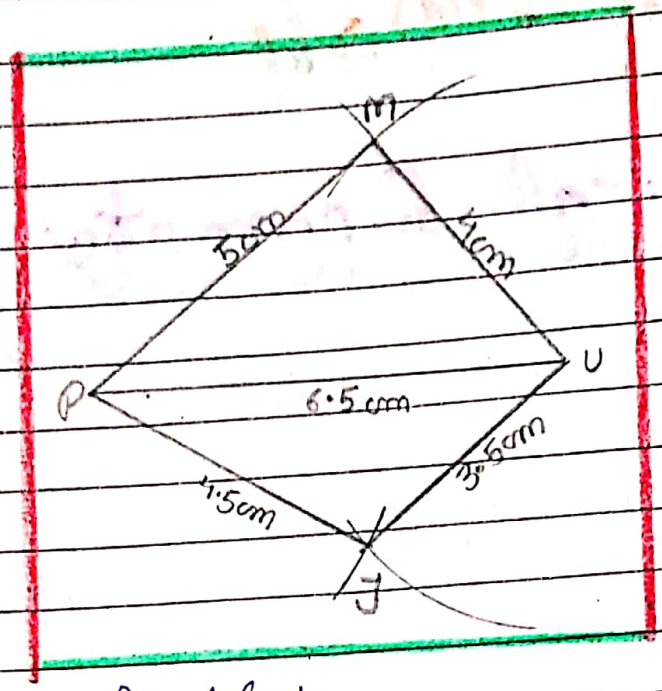
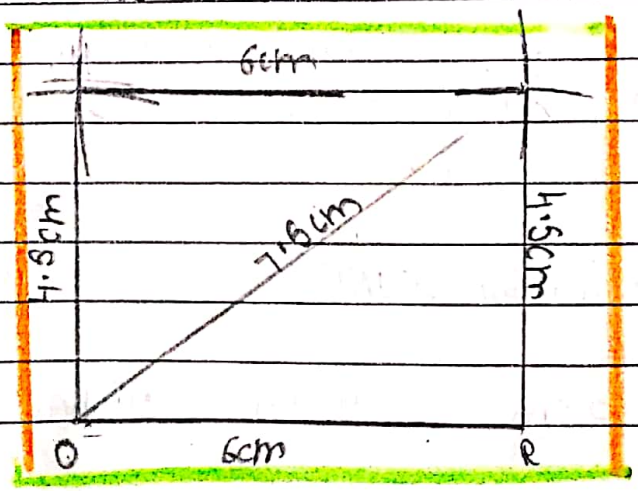


1. Draw PU = 6.5 cm
2. With P as centre and radius 4.5 cm, draw an arc (below PU)
3. With U as centre and radius 3.5 cm, draw another arc cutting the previous arc at J.
4. Join PJ and JU.
5. With P as centre and radius 5 cm, draw an arc (above PU).
6. With U as Centre and radius 4cm, draw another arc cutting the previous arc at M
7. Join PM and UM.

(iii) Parallelogram HORE

OR = 6 cm RE = 4.5 cm EO = 7.5 cm



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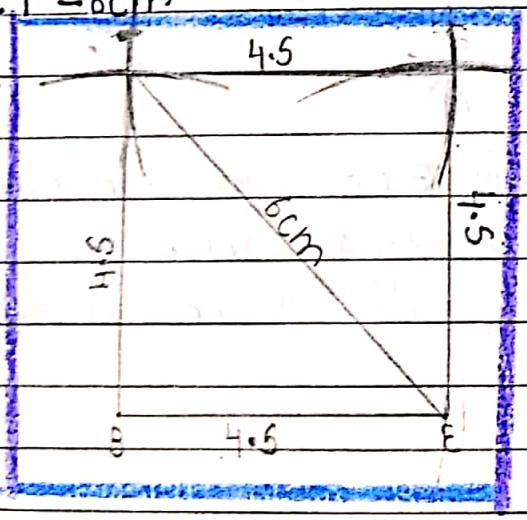
1. Draw OR = 6cm
2. With O as centre and radius 7.5 cm, draw an arc.
3. With R as centre and radius 4.5 cm, draw another arc to cut the previous arc at E
4. Join OE and RE
5. With O as centre and radius 4.5 cm, draw an arc.
6. With E as centre and radius 6cm, draw another arc to cut the previous arc at H
7. Join HO and HE.

(iv) Rhombus BEST

BE = 4.5 cm

ET = 6cm



1. Draw BE = 4.5cm
2. With B as centre and radius 4.5 cm, draw an arc
3. With E as centre and radius 6cm, draw another arc to cut the previous arc at T.
4. Join BT and ET
5. With T as centre and radius 4.5, draw an arc.
6. With E as centre and radius 4.5, draw another arc to cut the previous.
7. Join TS and ES

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Ex - 4.2

1) Construct the following quadrilaterals.

(i) quadrilateral LIFT

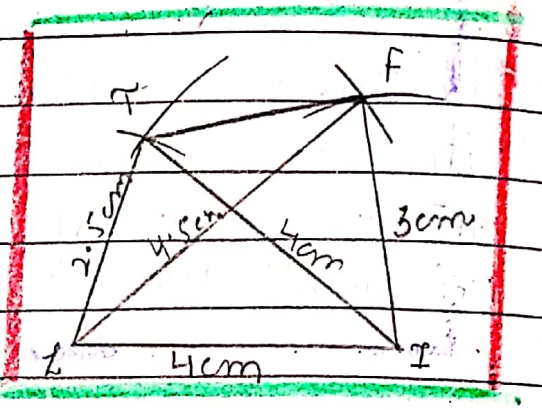
LI = 4cm

IF = 3cm

TL = 2.5cm

LF = 4.5cm

IT = 4cm



1. Draw LI = 4cm
2. With L as centre and radius 2.5 cm, draw an arc.
3. With I as centre and radius 4cm draw another arc to cut the previous arc at T.
4. Join TL and TI.
6. With I as centre radius 3 cm, draw another arc to cut the previously drawn arc at F.
5. With L as centre and radius 4.5 cm, draw an arc.
7. Join FI, FL and TF

(ii) Quadrilateral GOLD

(i) OL = 7.5 cm ~~GL = 6.~~ ~~GD = 6cm~~

GL = 6cm

GD = 6cm

LD = 5cm

OD = 10cm

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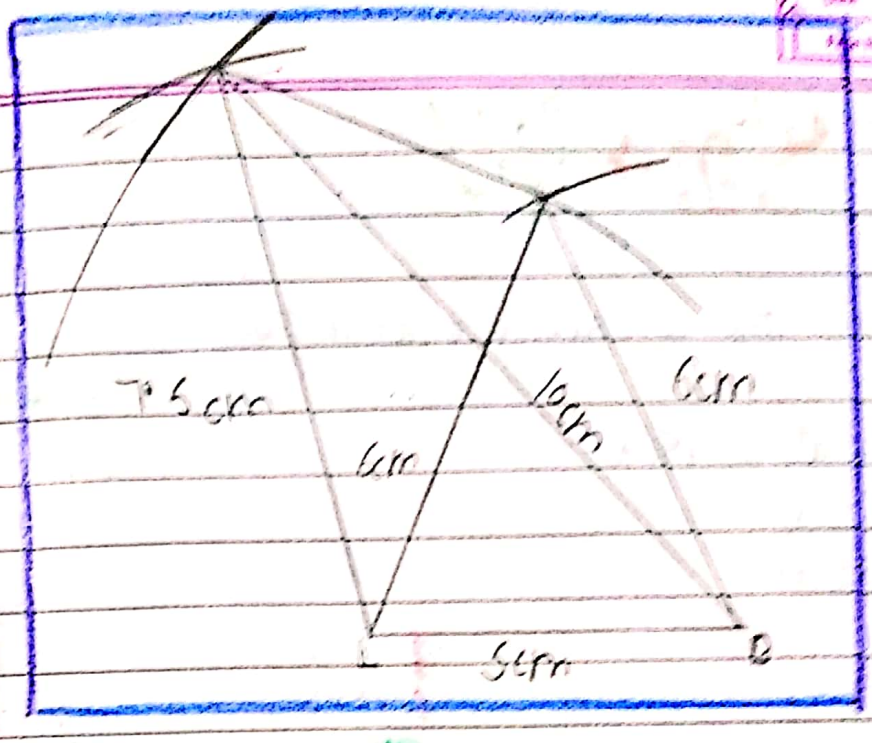
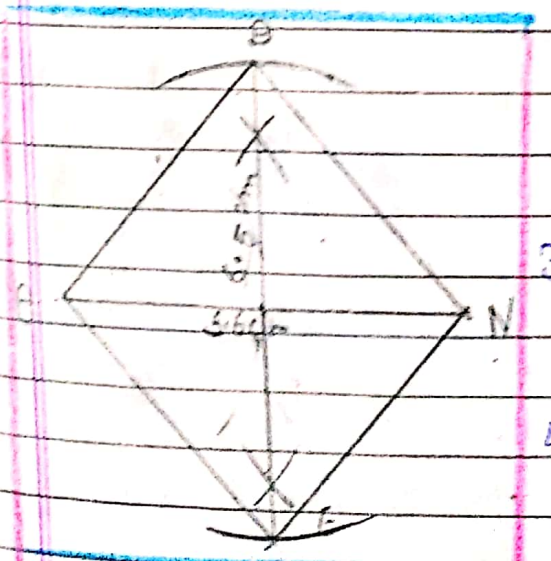


1. Draw LD = 5cm
2. With L as centre and radius 7.5cm, draw an arc.
3. With D as centre and radius 10cm, draw another arc to cut the 7.5cm previous arc at O
4. Join OL and OD
5. With L as centre and radius 6cm, draw an arc.
6. With d as centre and radius 6cm draw an arc cut the previously drawn arc at B.
7. Join BO, BL and OB.

(iii) Rhombus BEND (i) BN = 5.6cm (ii) DE = 6.5 cm



1. Draw BN = 5.6cm
2. Draw the right bisector XY of BN meeting BN at B
3. From B cut off BE = BD = ½(6.5) = 3.25 cm along BX and BD = 3.25 cm along BY
4. Join BE, EN, ND and DB

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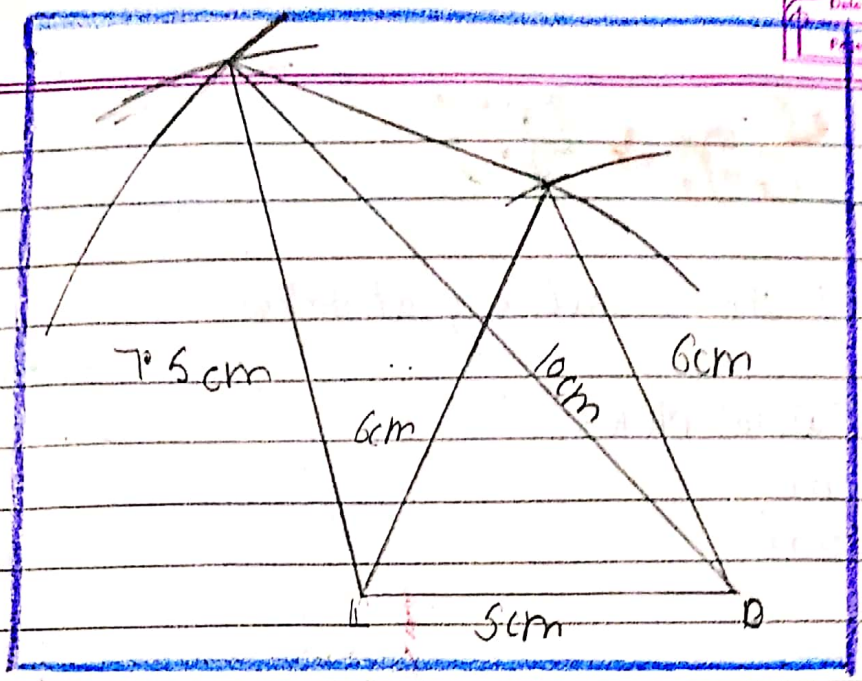
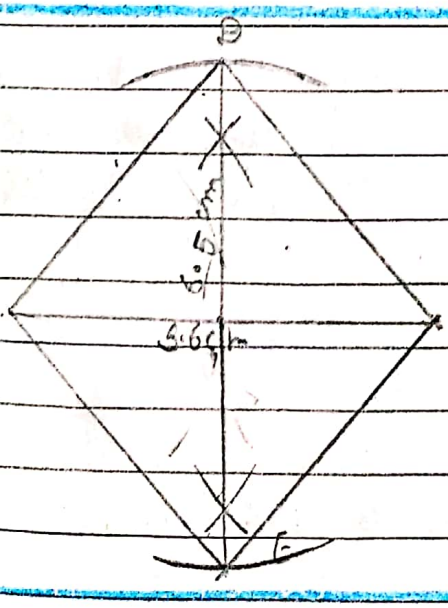


1° Draw LD = 5cm
2. With L as centre and radius 7·5cm, draw an arc.
3. With D as centre and radius 10cm, draw another arc to cut the 7·5cm previous arc at O
4. Join OL and OD
5. With L as centre and radius 6cm, draw an arc.
6. With d as centre and radius 6cm draw an arc cut the previously drawn arc at B.
7. Join BD, BL and OB.

(iii) Rhombus BEND (i) BN = 5·6cm (ii) DE = 6·5 cm



1. Draw BN = 5·6cm
2. Draw the right bisector XY of BN melting BN at O
3. From O set off $OE = \frac{1}{2}(6·5) = 3·2$ cm along OY and $OD = 3·25$ cm along OX
4. Join BE, EN, ND and DB

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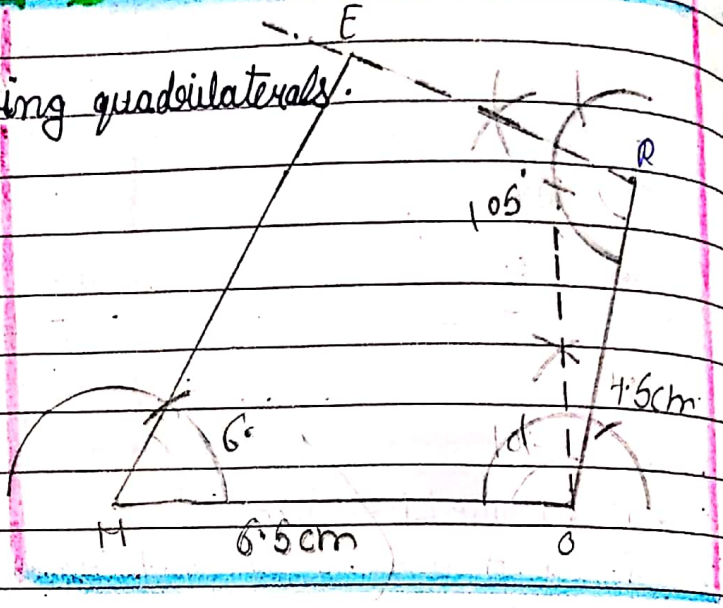
Ex 4.3

1. Construct the following quadrilaterals.

(i) Quadrilateral MORE

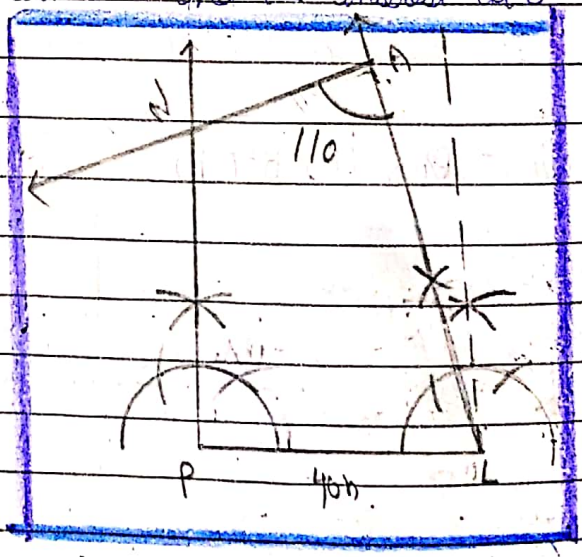
MO = 6cm
OR = 4·5cm
∠M = 60°
∠O = 105°
∠R = 105°



1. Draw MO = 6cm
2. Make ∠MOX = 105°
3. With O as centre and radius 4·5cm, cut off OR = 4·5cm cm along OY.
4. Make ∠ORY = 105°
6. Mak ∠ZMO = 60° such that arms RY and MZ intersect at E

(ii) Quadrilateral PLAN

PL = 4cm
∠A = 6·5cm
∠P = 90°
∠A = ~~85°~~ 110°
∠N = 85°



1. Draw PL = 4cm
2. Make ∠xPL = 90°
3. Make ∠YLP = 75°
4. With L as centre and radius 6·5 cm, cut off LA = 6·5 cm along LY.

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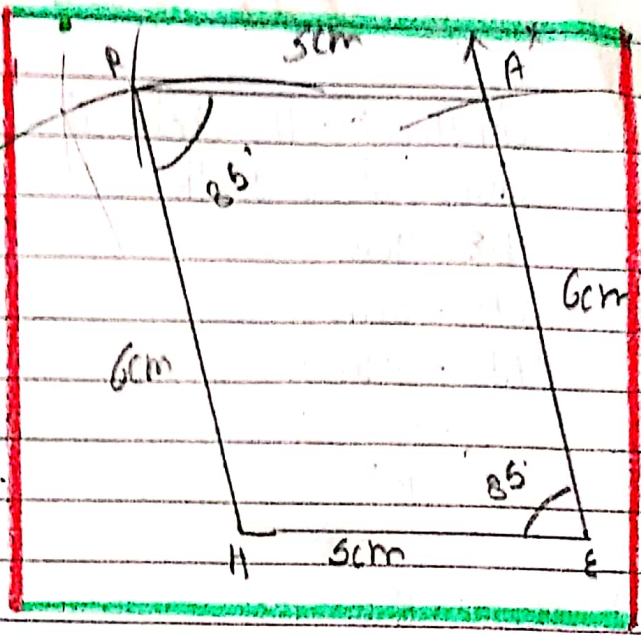
5. Make $\angle ZAL = 110°$ and left its arm AZ intersect PX at N.

(iii) Parallelogram HEAR

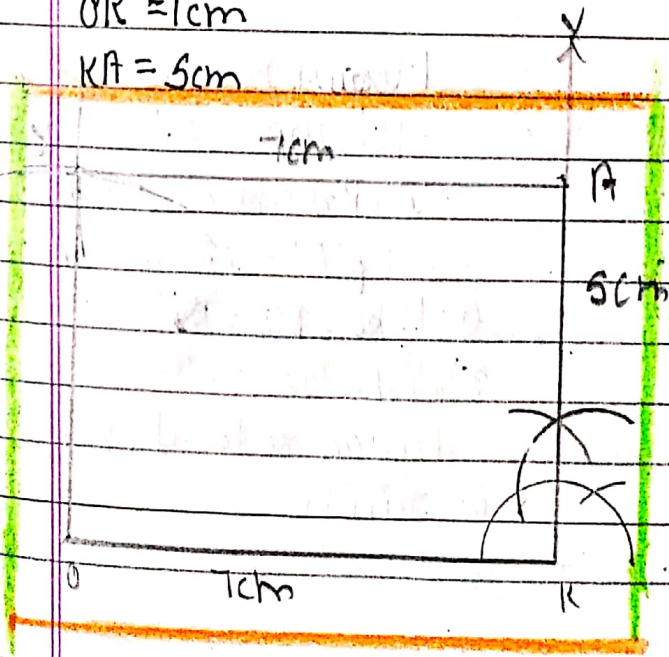
HE = 5cm
EA = 6cm
$\angle R = 85°$



1. Draw HE = 5cm
2. Make $\angle HEX = 85°$
3. With E as centre and radius 6cm, cutt off EA = 6cm along EX.
4. With A as centre and radius 5cm, draw an arc.
5. With H as centre and radius 6cm, draw another arc cutting the previous arc at R.
6. Join HR and AR

(iv) Rectangle OKAY

OK = 7cm
KA = 5cm



1) Draw OK = 7cm
2) Draw $\angle OKY = 90°$
3) With K as centre and radius 5 cm, draw an arc KY at A
4) With A as 5cm centre and radius 7cm, draw an arc
5) With O as centre and radius 5cm draw another arc cutting the previous arc at Y.
6) Join AY and OY.

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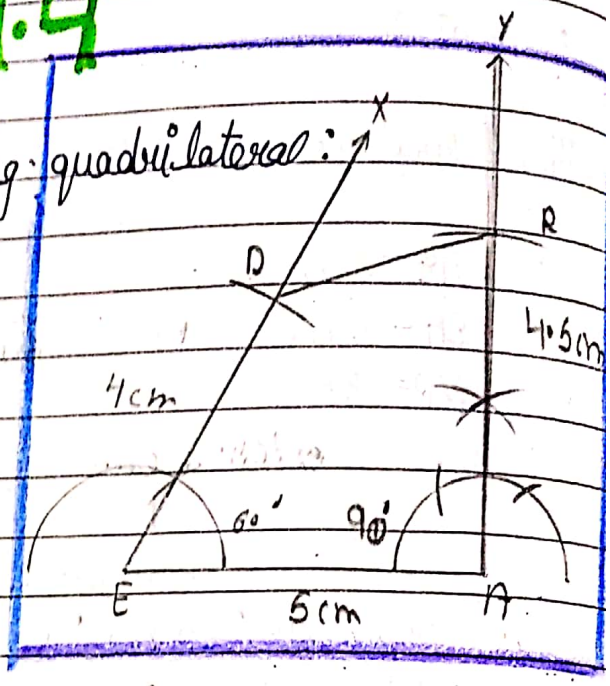
Ex 4.4

1. Construct the following quadrilateral:

(i) Quadrilateral DEAR

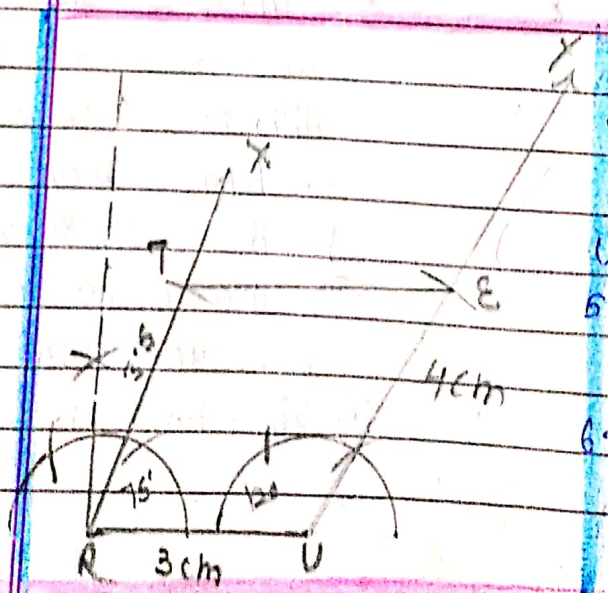
DE = 4cm
EA = 5cm
AR = 4.5 cm
∠E = 60°
∠A = 90°



1. Draw EA = 5cm.
2. Make ∠XEA = 60°
3. With E as centre and radius 4cm, cut off ED = 4 cm along EX.
4. Make ∠EAY = 90°
5. With A as centre and radius 4.5 cm, draw an arc to cut AY at R
6. Join DR

(ii) Quadrilateral TRUE

TR = 3.5 RU = 3cm UE = 4cm ∠R = 75° ∠U = 120°



1. Draw RU = 3cm
2. Make ∠URX = 75°
3. With R as center and radius 3.5cm, cut off RT = 3.5 cm along RX
4. Make ∠RUY = 120°
5. With U as centre and radius 4cm draw an arc to cut UY at E
6. Join TE

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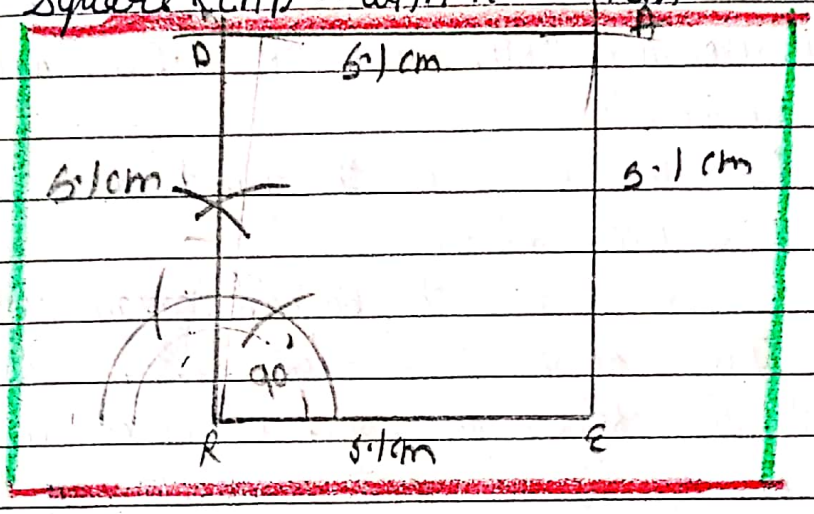
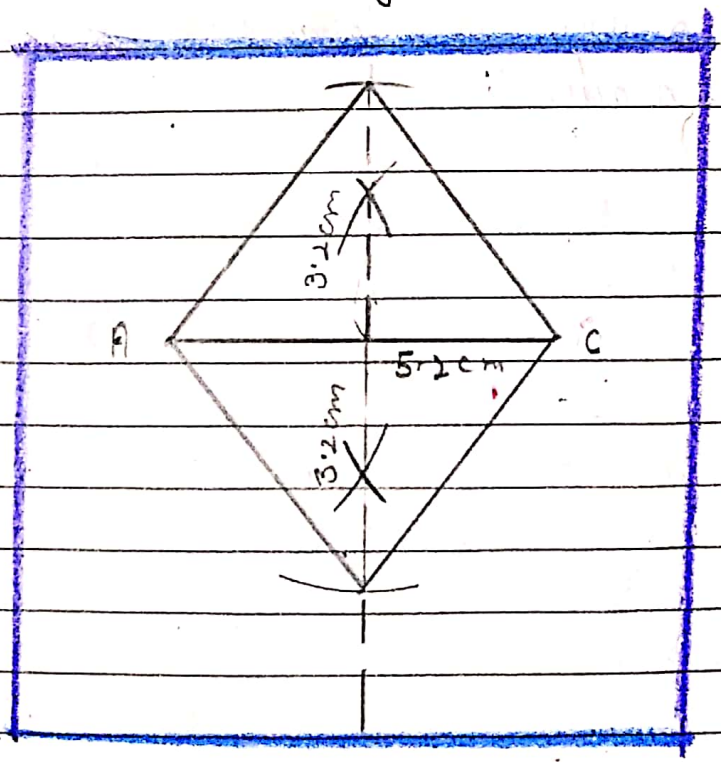
Ex 4.5

Draw the following.

1. The square READ with RE = 5.1 cm.



2. A rhombus whose diagonal are 5.2 cm and 6.4 cm long.



3. A rectangle with adjacent sides of length 5cm and 4cm.

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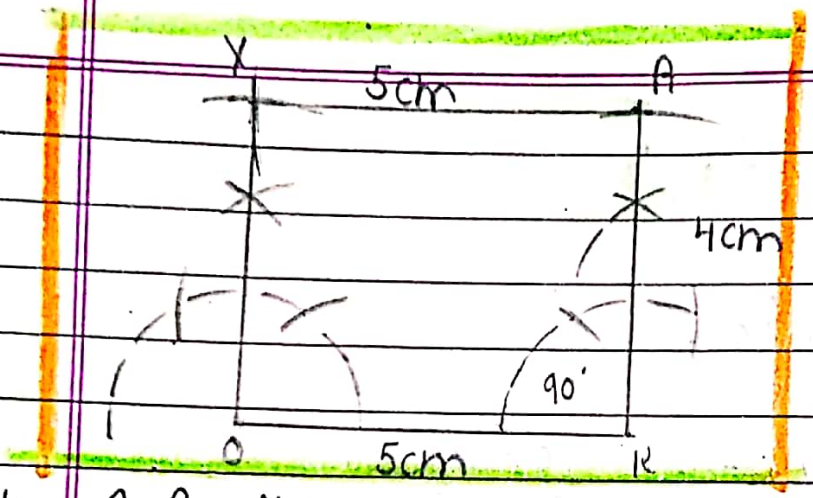

4. A Parallelogram OKAY where OK = 5·5 cm and KA = 4·2 cm. Is it unique?

Ans In order to draw a ~~the~~ quadrilateral, we need five measurements.

But here to draw the parallelogram OKAY, we are given two consecutive sides, i.e., four sides (the opposite sides being equal). So, we need information about one of its elements more. It may be the included angle between the sides or one of the diagonals to construct a unique quadrilateral. So, the required parallelogram cannot be drawn.

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