



MATHS

BOOKS - SWAN PUBLICATION

PRACTICAL GEOMETRY

Think Discuss And Write

1. Can you all four angles of a quadrilateral obtuse angles? Give reasons for your answer.



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2. We saw that 5 measurement of a quadrilateral can determine a quadrilateral uniquely. Do you think any five measurements of the quadrilateral can do this?

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3. Can you draw a parallelogram BATS where $BA = 5\text{cm}$, $AT = 6\text{ cm}$ and $AS = 6.5\text{ cm}$? Why?

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4. Can you draw a rhombus ZEAL, where $ZE = 3.5\text{ cm}$, diagonal $EL = 5\text{cm}$? Why?

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5. A student attempted to draw a quadrilateral PLAY where $PL = 3\text{ cm}$, $LA = 4\text{ cm}$, $AY = 4.5\text{ cm}$, $PY = 6\text{ cm}$, $LY = 6\text{ cm}$ but could not draw it. What is the reason?



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6. With the help of compass we can draw the angle of



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7. Can you construct a quadrilateral PQRS with $PQ = 3\text{ cm}$, $RS = 3\text{ cm}$, $PS = 7.5\text{ cm}$, $PR = 8\text{ cm}$ and $SQ = 4\text{ cm}$? Justify your answer.



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8. Can you construct the above quadrilateral (Fig. 4.18) MIST if we have 100° at M instead of 75° ?

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9. Can you construct the above quadrilateral PLAN if $PL = 6\text{cm}$, $LA = 9.5\text{ cm}$, $\angle P = 75^\circ = \angle L = 150^\circ$ and $\angle A = 140^\circ$.

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10. In a parallelogram, the length of adjacent sides are known. Do we still need measure of the angles to construct above?

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11. The first genetic material could be



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12. Construct a quadrilateral ABCD when $AB = 3.5$ cm, $BC = 4$ cm,

$CD = 3.7$ cm,

$DA = 4.2$ cm and $\angle A = 120^\circ$.



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13. Quadrilateral PQRS in which

$$PQ = QR = 6.2\text{cm}$$

$$\angle P = \angle Q = 100^\circ$$

$$\angle R = 90^\circ$$



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14. Can you all four angles of a quadrilateral obtuse angles? Give reasons for your answer.



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15. We saw that 5 measurement of a quadrilateral can determine a quadrilateral uniquely. Do you think any five measurements of the quadrilateral can do this?



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16. Can you draw a parallelogram BATS where $BA = 5\text{cm}$, $AT = 6\text{ cm}$ and $AS = 6.5\text{ cm}$? Why?



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17. Can you draw a rhombus ZEAL, where $ZE = 3.5$ cm, diagonal $EL = 5$ cm? Why?



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18. A student attempted to draw a quadrilateral PLAY where $PL = 3$ cm, $LA = 4$ cm, $AY = 4.5$ cm, $PY = 6$ cm, $LY = 6$ cm but could not draw it. What is the reason?



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19. With the help of compass we can draw the angle of



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20. Can you construct a quadrilateral PQRS with $PQ = 3\text{cm}$, $RS = 3\text{cm}$, $PS = 7.5\text{cm}$, $PR = 8\text{cm}$ and $SQ = 4\text{ cm}$? Justify your answer.

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21. Can you construct the above quadrilateral (Fig. 4.18) MIST if we have 100° at M instead of 75° ?

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22. Can you construct the above quadrilateral PLAN if $PL = 6\text{cm}$, $LA = 9.5\text{ cm}$, $\angle P = 75^\circ = \angle L = 150^\circ$ and $\angle A = 140^\circ$.

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23. In a parallelogram, the length of adjacent sides are known.

Do we still need measure of the angles to construct above?



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24. The first genetic material could be



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25. Construct a quadrilateral ABCD when $AB = 3.5$ cm, $BC = 4$ cm,

$CD = 3.7$ cm,

$DA = 4.2$ cm and $\angle A = 120^\circ$.



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26. Quadrilateral PQRS in which

$$PQ = QR = 6.2\text{cm}$$

$$\angle P = \angle Q = 100^\circ$$

$$\angle R = 90^\circ$$



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Exercise 4 1

1. Construct the following quadrilaterals.

Quadrilateral ABCD

AB = 4.5 cm, BC = 5.5 cm, CD = 4 cm, AD = 6 cm, AC = 7 cm.



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2. Construct the following quadrilaterals :

Quadrilateral JUMP

$$JU = 3.5 \text{ cm}$$

$$UM = 4 \text{ cm}$$

$$MP = 5 \text{ cm.}$$

$$PJ = 4.5 \text{ cm}$$

$$PU = 6.5 \text{ cm.}$$



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3. Construct the following quadrilaterals :

Parallelogram MORE

$$OR = 6 \text{ cm.}$$

$$RE = 4.5 \text{ cm}$$

$$EO = 7.5 \text{ cm.}$$



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4. Construct the following quadrilaterals :

Rhombus BEST

BE = 4.5 cm

ET = 6 cm.



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5. Construct the following quadrilaterals.

Quadrilateral ABCD

AB = 4.5 cm, BC = 5.5 cm, CD = 4 cm, AD = 6 cm, AC = 7 cm.



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6. Construct the following quadrilaterals :

Quadrilateral JUMP

$$JU = 3.5 \text{ cm}$$

$$UM = 4 \text{ cm}$$

$$MP = 5 \text{ cm.}$$

$$PJ = 4.5 \text{ cm}$$

$$PU = 6.5 \text{ cm.}$$



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7. Construct the following quadrilaterals :

Parallelogram MORE

$$OR = 6 \text{ cm.}$$

$$RE = 4.5 \text{ cm}$$

$$EO = 7.5 \text{ cm.}$$



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8. Construct the following quadrilaterals :

Rhombus BEST

BE = 4.5 cm

ET = 6 cm.



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Exercise 4 2

1. Construct the following quadrilaterals :

Qadrilateral LIFT

LI = 4 cm

IF = 3 cm

TL = 2.5 cm

$$LF = 4.5 \text{ cm}$$

$$IT = 4 \text{ cm.}$$



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2. Quadrilateral GOLD

$$OL = 7.5 \text{ cm}$$

$$GL = 6 \text{ cm.}$$

$$GD = 6 \text{ cm}$$

$$LD = 5 \text{ cm}$$

$$OD = 10 \text{ cm.}$$



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3. Construct the following quadrilateral : Rhombus BEND.

$$BN = 5.6 \text{ cm}$$

DE = 6.5 cm.



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4. Construct the following quadrilaterals :

Quadrilateral LIFT

LI = 4 cm

IF = 3 cm

TL = 2.5 cm

LF = 4.5 cm

IT = 4 cm.



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5. Quadrilateral GOLD

OL = 7.5 cm

$GL = 6 \text{ cm.}$

$GD = 6 \text{ cm}$

$LD = 5 \text{ cm}$

$OD = 10 \text{ cm.}$



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6. Construct the following quadrilateral : Rhombus BEND.

$BN = 5.6 \text{ cm}$

$DE = 6.5 \text{ cm.}$



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Exercise 4 3

1. Quadrilateral MORE

$MO = 6\text{cm}$, $OR = 4.5\text{cm}$, $\angle M = 60^\circ$, $\angle O = 105^\circ$, $\angle R = 105^\circ$.



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2. Quadrilateral PLAN

$PL = 4\text{cm}$, $LA = 6.5\text{cm}$, $\angle P = 90^\circ$, $\angle A = 110^\circ$, $\angle N = 85^\circ$.



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3. Construct the following quadrilaterals :

Parallelogram MORE

OR = 6 cm.

RE = 4.5 cm

EO = 7.5 cm.



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4. Construct the following quadrilaterals. Rectangle OKAY $OK = 7$
cm $KA = 5$ cm

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5. Quadrilateral MORE

$MO = 6\text{cm}$, $OR = 4.5\text{cm}$, $\angle M = 60^\circ$, $\angle O = 105^\circ$, $\angle R = 105^\circ$.

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6. Quadrilateral PLAN

$PL = 4\text{cm}$, $LA = 6.5\text{cm}$, $\angle P = 90^\circ$, $\angle A = 110^\circ$, $\angle N = 85^\circ$.

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7. Construct the following quadrilaterals :

Parallelogram MORE

OR = 6 cm.

RE = 4.5 cm

EO = 7.5 cm.



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8. Construct the following quadrilaterals. Rectangle OKAY OK = 7

cm KA = 5 cm



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1. Quadrilateral DEAR

$DE = 4 \text{ cm}, EA = 5 \text{ cm}, AR = 4.5 \text{ cm}, \angle E = 60^\circ, \angle A = 90^\circ.$



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2. Quadrilateral TRUE

$TR = 3.5 \text{ cm}, RU = 3 \text{ cm}, UE = 4 \text{ cm}, \angle R = 75^\circ, \angle U = 120^\circ.$



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3. Quadrilateral DEAR

$DE = 4 \text{ cm}, EA = 5 \text{ cm}, AR = 4.5 \text{ cm}, \angle E = 60^\circ, \angle A = 90^\circ.$



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4. Quadrilateral TRUE

$TR = 3.5 \text{ cm}$, $RU = 3 \text{ cm}$, $UE = 4 \text{ cm}$, $\angle R = 75^\circ$, $\angle U = 120^\circ$.



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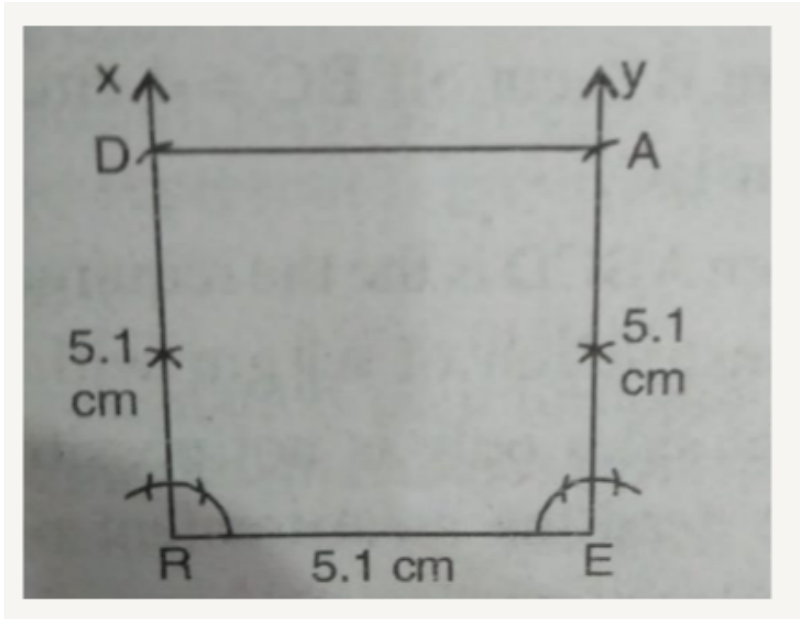
Exercise 4 5

1. Draw the following : The square READ with $RE = 5.1 \text{ cm}$.



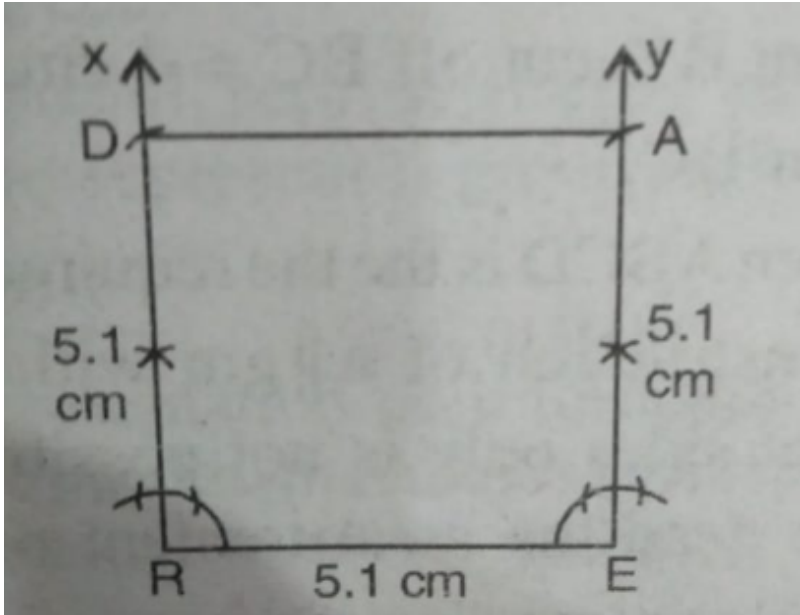
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2. A rhombus whose diagonals are 5.2 cm and 6.4 cm along.



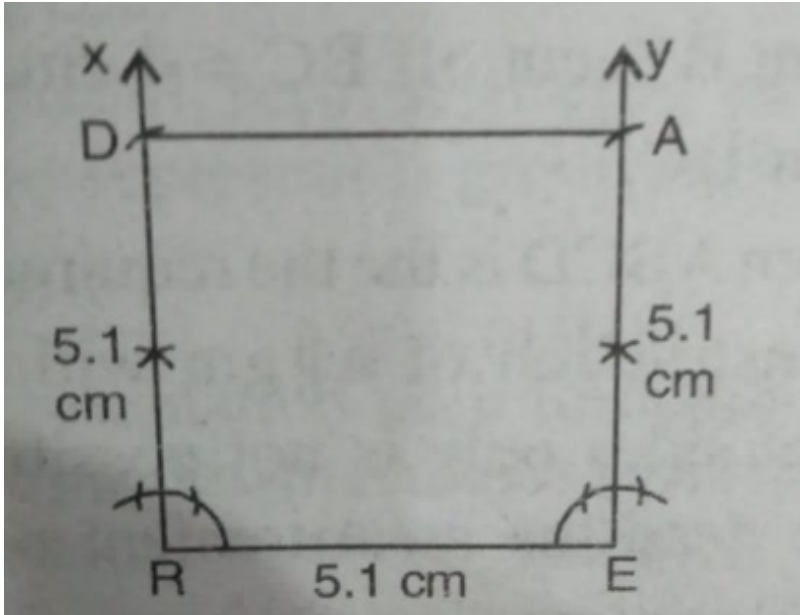
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3. A rectangle with adjacent sides of lengths 5 cm and 4 cm.



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4. A parallelogram OKAY where $OK = 5.5$ cm and $KA = 4.2$ cm

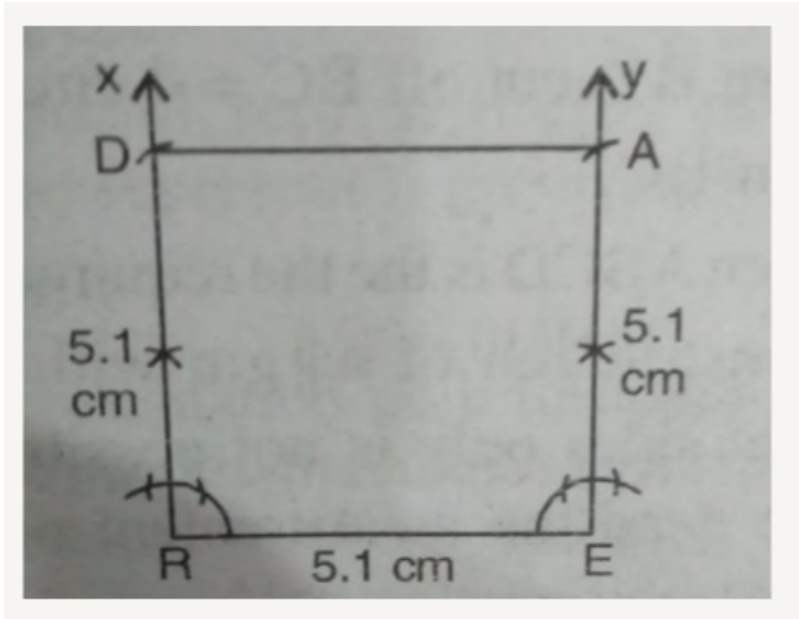


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5. Draw the following : The square READ with $RE = 5.1$ cm.

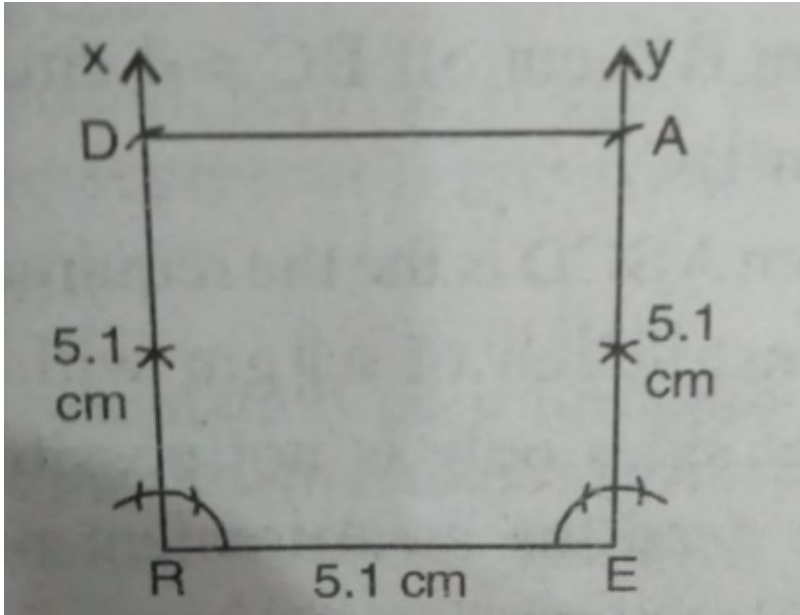
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6. A rhombus whose diagonals are 5.2 cm and 6.4 cm along.



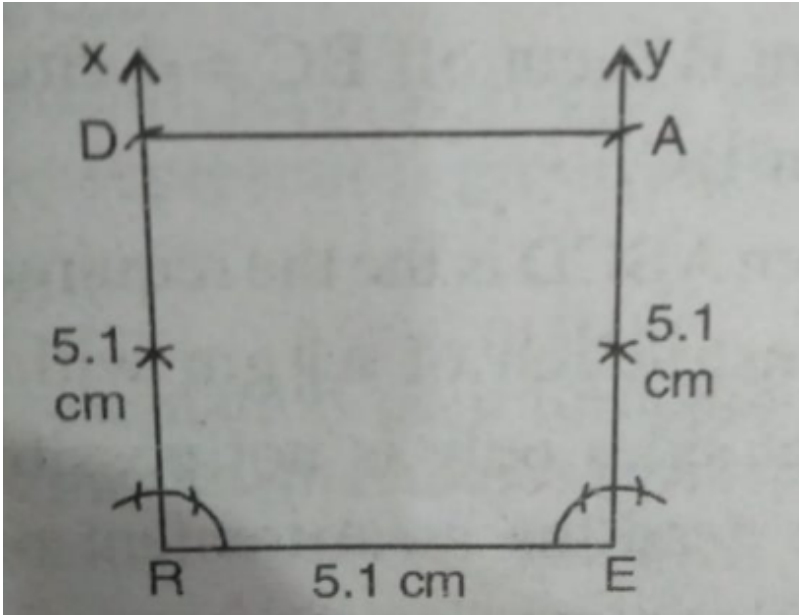
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7. A rectangle with adjacent sides of lengths 5 cm and 4 cm.



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8. A parallelogram OKAY where $OK = 5.5$ cm and $KA = 4.2$ cm



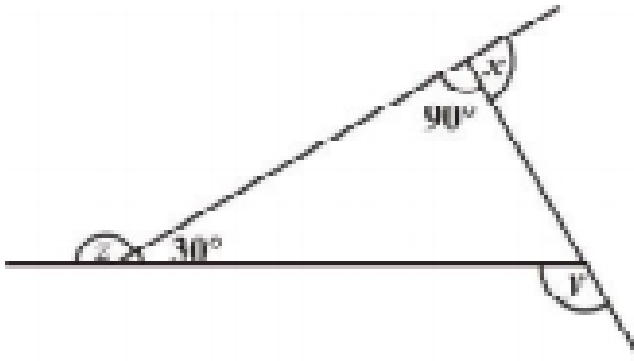
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Try These

1. How will you construct a rectangle PQRS if you know only the lengths PQ and QR?

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2. Find $x+y+z$

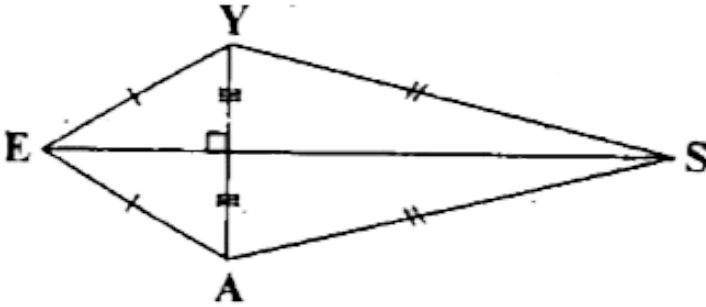


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3. How will you construct a rectangle PQRS if you know only the lengths PQ and QR?

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4. Construct the kite EASY if $AY = 8$ cm, $EY = 4$ cm and $SY = 6$ cm (Fig.). Which properties of the kite did you use in the process?



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