



MATHS

BOOKS - VIDHYASANGAM - RAO'S ACADEMY MATHS (KANNADA ENGLISH)

AREA OF PARALLELOGRAMS AND TRIANGLES

Exercise 111

1. Which of the following figures lie on the same base and between the same parallels. In shuch a case, write the common base and the two prarllels.



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Exercise 11 2

1. In ABCD is a parallelogram, AE \perp DC and CF \perp AD. If AB = 16 cm, AE = 8 cm and CF = 10 cm, find AD.





2. If E,F, G and H are respectively the midpoints of the sides of a parallelogram ABCD, show that ar (EFGH) = $\frac{1}{2}$ ar (ABCD)





3. P and Q are any two points lying on the sides DC and AD respectively of a parallelogram ABCD. Show that ar (APB) = ar (BQC).



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4. In P is a point in the interior of a parallelogram ABCD. Show that(ii)ar (APD) + ar (PBC) = ar (APB) + ar (PCD)`





5. In, PQRS and ABRS are parallelograms and X is any point on side BR. Show that

ar (PQRS) = ar (ABRS)

as (AXS) = $\frac{1}{2}$ ar (PQRS)





6. A farmer was having a field in the form of a parallelogram PQRS. She took any point A on RS and joined it to points P and Q. In how many parts the fields is divided? What are the

shapes of these parts? The farmer wants to sow wheat and pulses in equal portions of the field separately. how should she do it?



Exercise 11 3

1. In the figure 11.23, E is any point on median

AD of a \triangle ABC. Show that ar (ABE) = ar (ACE).



2. In a triangle ABC, E is the mid-point of median AD. Show that ar (BED) = $\frac{1}{4}$ ar (ABC).





3. Show that the diagonals of a parallelogram divide it into four triangles of equal area.



4. In, ABC and ABD are two triangles on the same base AB. If line- segment CD is bisected

by AB at O, show that ar (ABC) = ar (ABD).





5. If E,F, G and H are respectively the midpoints of the sides of a parallelogram ABCD, show that ar (EFGH) = $\frac{1}{2}$ ar (ABCD)





6. D and E are points on sides AB and AC respectively of Δ ABC such that ar (DBC) = ar

EBC). Prove that DE||BC.





7. Diagonals AC and BD of a trapezium ABCD with AB||DC intersect each other at O. Prove

that ar (AOD) = ar (BOC).



8. In, ABCDE is a pentagon. A line through B

parallel to AC meets DC produced at F. Show

that

(i)ar (ACB) = ar (ACF)

(ii)ar (AEDF) = ar(ABCDE)





Exercise 11 4

1. Parallelogram ABCD and rectangle ABEF are on the same base AB and have equal areas. Show that the perimeter of the parallelogram is greater than that of the rectangle.

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2. In, D and E are two points on BC such thatBD = De = EC. Show that ar (ABD) = ar (ADE) = ar(AEC).

Can you now answer the question that you

have left in the 'introduction' of this chapter, whether the field of Budhia has been actually divided into three parts of equal area?



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3. Diagonals AC and BD of a quadrilateral ABCD intersect each other at P. Show that ar (APB)

 \times ar (CPD) = ar (APD) \times ar (BPD).

[Hint : From A and C, draw perpendiculars to BD.

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