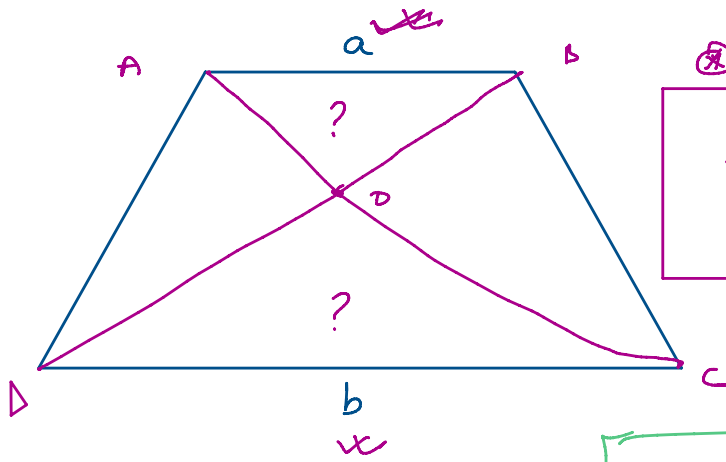
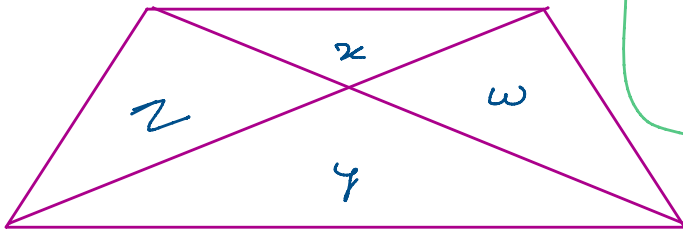


dent



$$\frac{a^2}{b^2} = \frac{\text{Area of } \triangle AOB}{\text{Area of } \triangle COD}$$

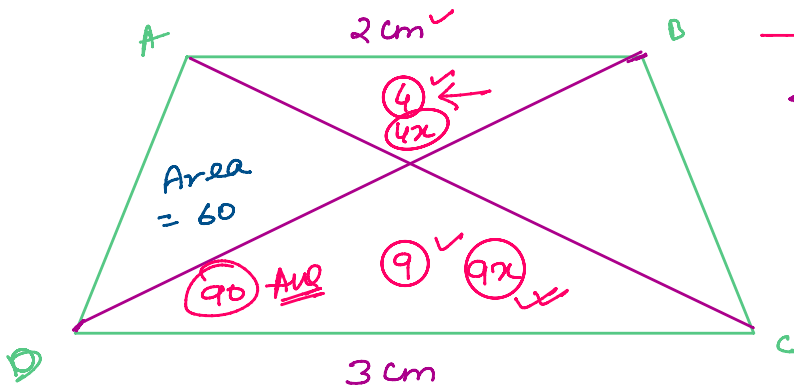


① $z = w$

② $w \times y = z \times x$

$z^2 = x \times y$

$z = \sqrt{x \times y}$



① $\frac{\text{Area of } \triangle AOB}{\text{Area of } \triangle COD} = \left(\frac{AB}{DC}\right)^2$

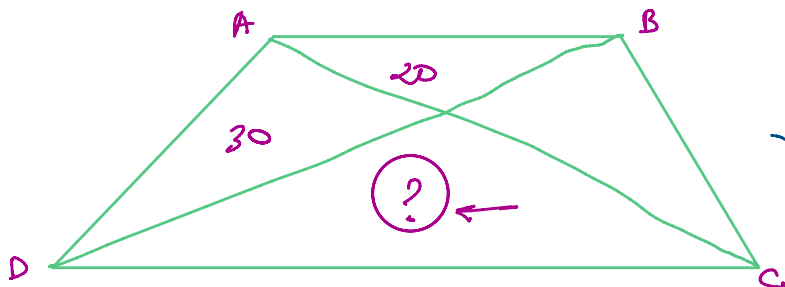
② $R = \sqrt{r \times a}$

$\sqrt{4x \times 9x} = 60$

$\sqrt{36x^2} = 60$

$6x = 60$ ⑩

$9x = 90$ Area



Area ?

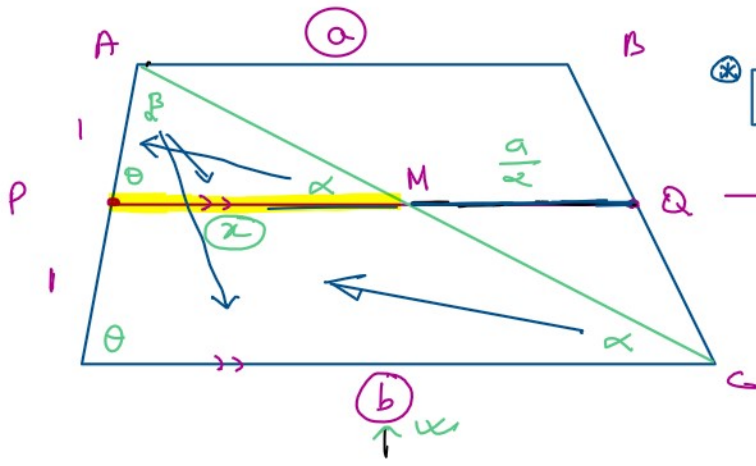
$\sqrt{20 \times x} = 30$

$20x = 900$

$x = 45$ Area



11



Similarity

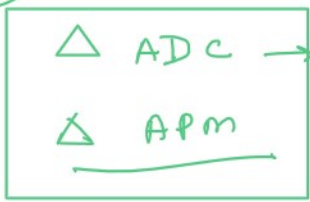
Mid point

$PQ = ?$

$$= \frac{1}{2}(a+b)$$

$$MQ = \frac{a}{2}$$

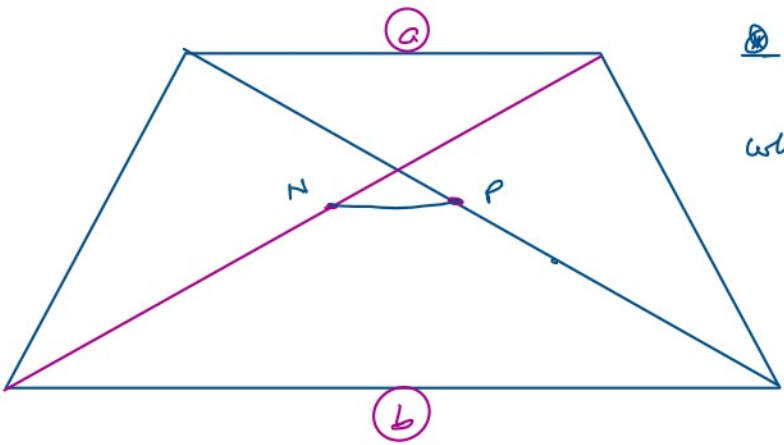
$$\frac{b}{2} + \frac{a}{2} = \frac{a+b}{2}$$



PM

$$\frac{1}{x} = \frac{2}{b}$$

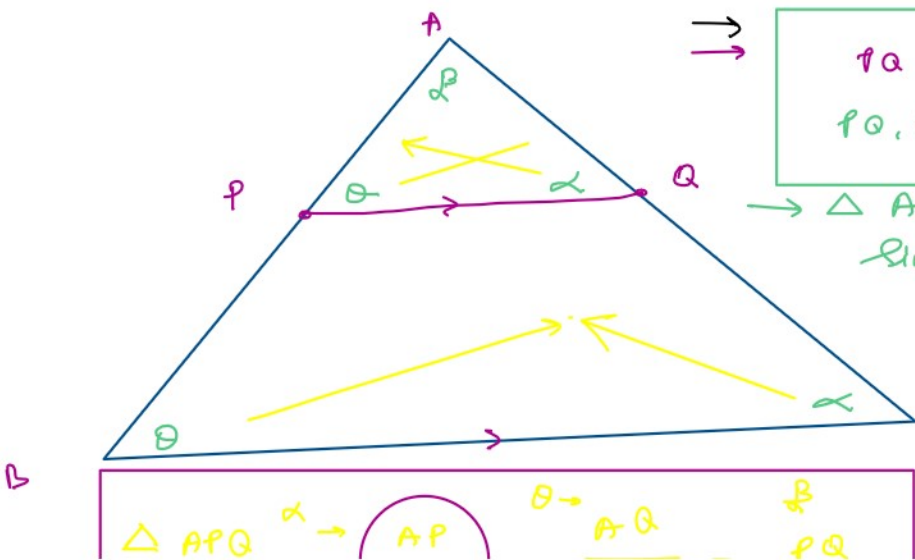
$$x = \frac{b}{2}$$



$NP = ? \frac{1}{2}(b-a)$
when N, P are mid points of diagonals

Similarity

4



$PQ \parallel BC$
 $PQ, BC \propto$

$\rightarrow \Delta APQ$ and ΔABC similar by AA

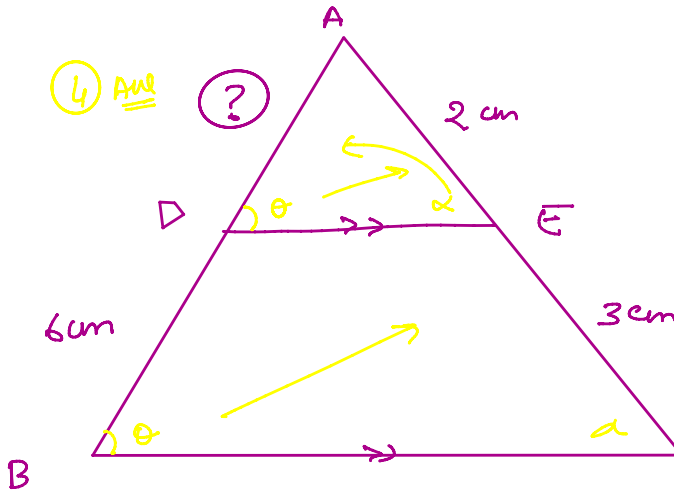
Auf

B

$$\begin{array}{l} \triangle APQ \xrightarrow{\alpha} \frac{AP}{AB} \\ \triangle ABC \xrightarrow{\alpha} \frac{AB}{AC} = \frac{PQ}{BC} \end{array}$$

(Auf)

Similarity



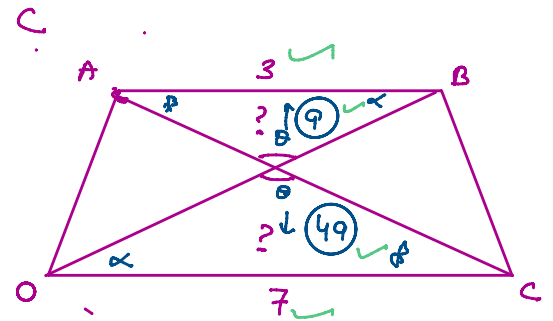
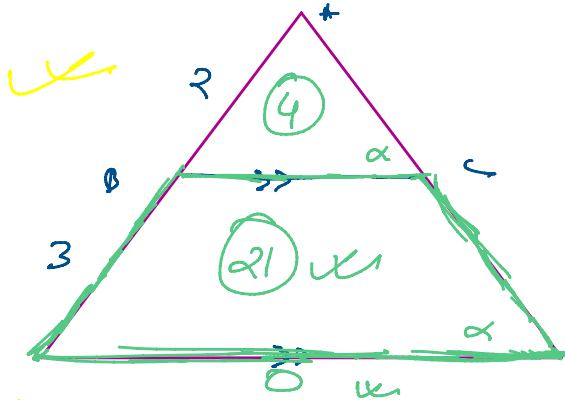
DE || BC

$$\frac{2}{5} = \frac{x}{x+6}$$

$$2x + 12 = 5x$$

$$3x = 12$$

$$x = 4 \text{ Auf}$$



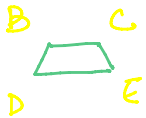
$$\left(\frac{2}{6}\right)^2 = \frac{4}{36}$$

$$\left(\frac{2}{5}\right)^2 \rightarrow \text{side ratio}^2$$

$$\frac{2^2}{5^2} = \frac{4}{25} \rightarrow \frac{\Delta ABC}{\Delta ADE}$$

Auf
Beispiel
Vorbild

Area ratio $\rightarrow \frac{\Delta ABC}{\Delta ADE}$

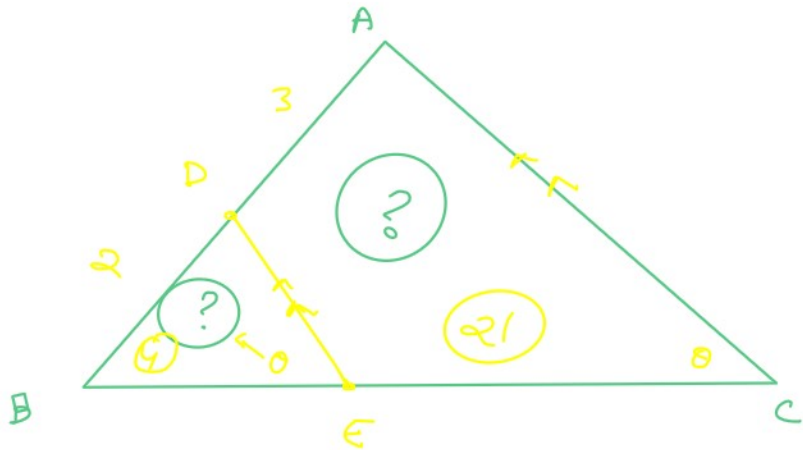


and ΔABC for Area Ratio

135. In a triangle ΔABC side AB & BC has two point D & E such a way $DE \parallel AC$ and $AD : BD = 3 : 2$. Find the ratio of area of trapezium ACED and triangle ΔBED .

ΔABC में, भुजा AB तथा BC पर दो बिन्दु D तथा E इस प्रकार है कि $DE \parallel AC$ तथा $AD : BD = 3 : 2$ समलम्ब चतुर्भुज ACED तथा त्रिभुज ΔBED के क्षेत्रफलों का अनुपात ज्ञात करो।

- (A) 8 : 3 (B) 5 : 4
 (C) 4 : 21 (D) 21 : 4

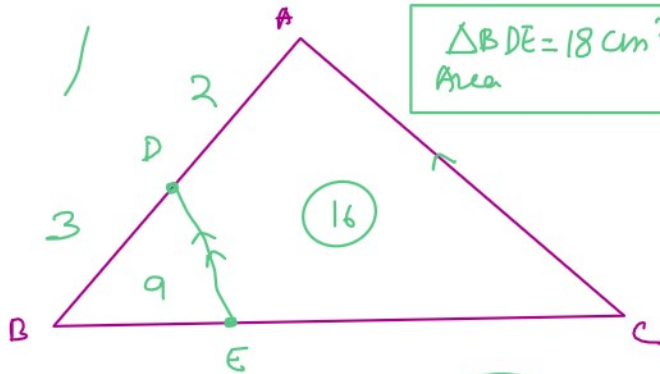


$$\left(\frac{2}{5}\right)^2 = \frac{4}{25} \rightarrow \frac{\Delta BED \text{ Area Ratio}}{\Delta ABC \text{ Area Ratio}}$$

409. In a ΔABC , D and E are two points on sides AB and BC respectively such that $AD : DB = 2 : 3$ and $DE \parallel AC$. If the area of ΔBDE is equal to 18 cm^2 , then what is the area (in cm^2) of ΔABC ?

ΔABC में, भुजा AB और BC पर क्रमशः D और E दो बिंदु इस प्रकार हैं कि $AD : DB = 2 : 3$ और $DE \parallel AC$ है। यदि ΔBDE का क्षेत्रफल 18 cm^2 है, तो ΔABC का क्षेत्रफल (cm^2 में) क्या है?

- (A) 40.5 (B) 75
 (C) 54 (D) 45



$$\left(\frac{3}{5}\right)^2 = \frac{9}{25}$$

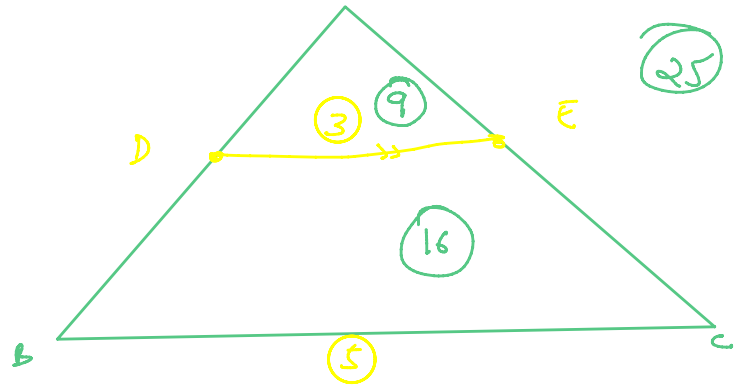
18 —→ 16
 25 —→ 50 Ans

404. In $\triangle ABC$, D and E are the points on sides AB and AC, respectively. Such that $DE \parallel BC$. If $DE : BC$ is $3 : 5$, then (Area of $\triangle ADE$) : (Area of quadrilateral DECB) is :

$\triangle ABC$ में, भुजाएँ AB और AC पर क्रमशः D और E बिंदु इस प्रकार हैं कि $DE \parallel BC$ यदि $DE : BC$ $3 : 5$ है, तो ($\triangle ADE$ का क्षेत्रफल) : (चतुर्भुज DECB का क्षेत्रफल) है :

✓

- (A) 9 : 16 (B) 3 : 4
(C) 9 : 25 (D) 5 : 8



$$\left(\frac{3}{5}\right)^2 = \frac{9}{25}$$

$$\frac{9}{25}$$

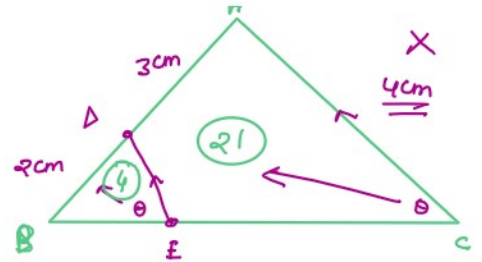
$$\boxed{9 : 16}$$

Ans

403. In $\triangle ABC$, D is a point on side AB such that $BD = 2$ cm and $DA = 3$ cm. E is a point on BC such that $DE \parallel AC$, and

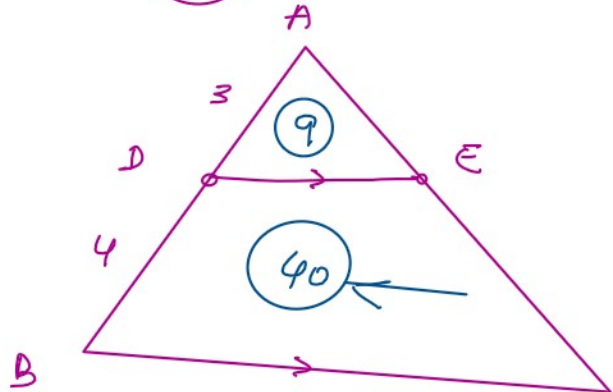


403. In $\triangle ABC$, D is a point on side AB such that $BD = 2$ cm and $DA = 3$ cm. E is a point on BC such that $DE \parallel AC$, and $AC = 4$ cm. Then (Area of $\triangle BDE$) : (Area of trapezium ACED) is :
 $\triangle ABC$ में, D भुजा AB पर एक बिन्दु इस प्रकार है कि $BD = 2$ सेमी. और $DA = 3$ सेमी. E एक बिन्दु BC पर इस प्रकार है कि $DE \parallel AC$, और $AC = 4$ सेमी. है, तो $\triangle BDE$ का समलम्ब चतुर्भुज ACED से अनुपात ज्ञात करें?
 (A) 4 : 21 (B) 2 : 5
 (C) 1 : 5 (D) 4 : 25



$$\frac{2}{5} = \frac{4}{25}$$

414. In triangle ABC, D and E are two points on the sides AB and AC respectively so that $DE \parallel BC$ and $\frac{AD}{BD} = \frac{3}{4}$. The ratio of the area of $\triangle ABC$ to the area of trapezium DECB is :
 त्रिभुज ABC में, AB और AC भुजाओं पर दो बिन्दु क्रमशः D और E इस तरह हैं कि $DE \parallel BC$ और $\frac{AD}{BD} = \frac{3}{4}$ है। $\triangle ABC$ के क्षेत्रफल का समलम्ब चतुर्भुज DECB के क्षेत्रफल से अनुपात है :
 (A) 33 : 49 (B) 49 : 40
 (C) 40 : 49 (D) 49 : 33



$$\frac{\text{Area of } \triangle ADE}{\text{Area of } \triangle ABC} = \left(\frac{3}{7}\right)^2 = \frac{9}{49}$$

49 : 40
 Type-2 Reasoning
 * 40, 21
 for tuja

415. In triangle ABC, D and E are two points on the side AB and AC respectively so that $DE \parallel BC$ and $\frac{AD}{BD} = \frac{5}{6}$. The ratio of the area of $\triangle ABC$ to the area of trapezium DECB is :
 त्रिभुज ABC में, AB और AC भुजाओं पर D और E क्रमशः दो बिन्दु इस तरह हैं कि $DE \parallel BC$ और $\frac{AD}{BD} = \frac{5}{6}$ है। $\triangle ABC$ के तथा समलम्ब चतुर्भुज DECB के क्षेत्रफल का अनुपात है :
 (A) 96 : 121 (B) 121 : 96
 (C) 36 : 121 (D) 121 : 36