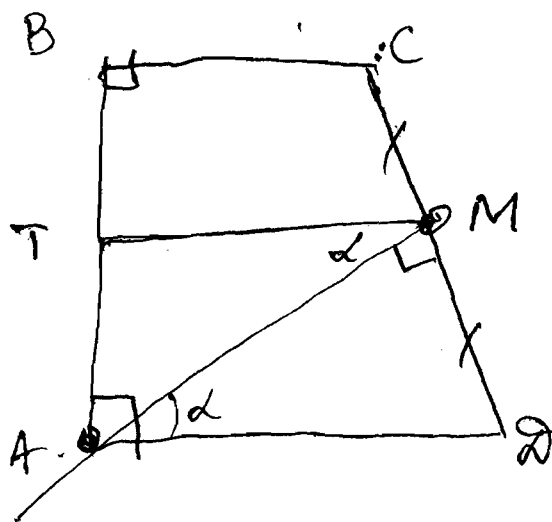




$$AB = \frac{2}{3} \cdot AM$$

$$CM = MD$$

$$\angle AMD = 90^\circ$$

$$AD : BC = ?$$

Проведем среднюю линию TM.

Тогда $\sin \angle TMA = \sin \alpha = \frac{TA}{AM}$

$$TA = \frac{1}{2} AB \Rightarrow TA = \frac{1}{3} AM \Rightarrow \sin \alpha = \frac{1}{3}$$

$$\Rightarrow \cos \alpha = \sqrt{1 - \sin^2 \alpha} = \sqrt{1 - \frac{1}{9}} = \frac{\sqrt{8}}{3}$$

$$AD = \frac{AM}{\cos \alpha} = \frac{AM \cdot 3}{\sqrt{8}}$$

$$TM = AM \cdot \cos \alpha = \frac{AM \cdot \sqrt{8}}{3}$$

Так как TM — средняя линия, то ~~TM = \frac{AD+BC}{2}~~

$$BC + AD = 2 \cdot TM \Rightarrow BC = \del{AD + 2 \cdot TM} 2 \cdot TM - AD$$

$$BC = \frac{AM \cdot 2 \cdot \sqrt{8}}{3} - \frac{AM \cdot 3}{\sqrt{8}}$$

$$BC = \frac{AM \cdot 8 \cdot 2 - AM \cdot 9}{3\sqrt{8}} = \frac{7 \cdot AM}{3\sqrt{8}}$$

$$\Rightarrow AD : BC = \frac{AM \cdot 3}{\sqrt{8}} : \left(\frac{7 \cdot AM}{3\sqrt{8}} \right) = \frac{3 \cdot 3}{7} = \frac{9}{7}$$

$$\boxed{AD : BC = 9 : 7}$$