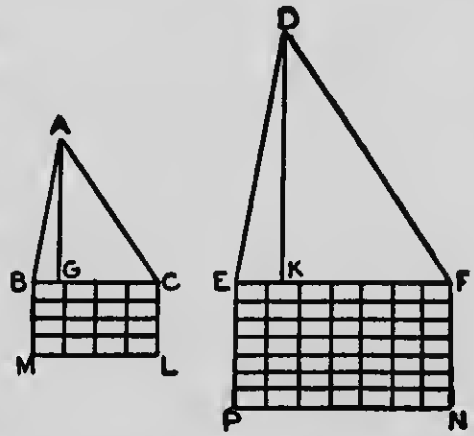
2. Again, let **ABC** and **DEF** be similar triangles, having the base **EF** one and three-quarter times the base **BC**. That is, the base **BC** is to the base **EF** as 4 is to 7, since $1:1\frac{3}{4}=4:7$. Since the angles are similar, the other sides of **DEF** are $1\frac{3}{4}$ times the corresponding sides of **ABC**. If **AG** and **DK** be the perpendiculars to the bases, the triangles **ABG** and **DEK** are equiangular, and, therefore, since **DE** is $1\frac{3}{4}$ times **AB**, **DK** is also $1\frac{3}{4}$ times **AG**.

If rectangles be constructed on the bases equal to the triangles, the heights of these rectangles are half the heights of the triangles (Ch. VIII., 5). Hence **FN**, which is half of **DK**, is $1\frac{3}{4}$ times **CL**, which is half of **AG**.



So that the rectangle **EFNP** (which is equal to the triangle **DEF**) is $1\frac{3}{4}$ times as long and $1\frac{3}{4}$ times as high as the rectangle **BCLM** (which is equal to the triangle **ABC**). That is, of such parts as **EF** contains 7, **BC** contains 4; and of such parts as **FN** contains 7, **CL** contains 4. Hence of such small areas as the rectangle **EFNP** contains $7^2=49$, the rectangle **BCLM** contaius $4^2=16$. And therefore the triangle **ABC** is to the triangle **DEF** as 16 is to 49.

That is, when

$$BC:EF=1:1\tfrac{3}{4}=4:7,$$

then, triangle **ABC**: triangle **DEF** $=16:49=4^2:7^2$
or $1:(1\frac{3}{4})^2$.