## CHAPTER XXI.

## Similar Triangles. (Continued).

1. Let ABC and DEF be similar triangles, having the base EF three times the base BC. The other sides of DEF are therefore three times the corresponding

sides of ABC. If DK and AG be the perpendiculars to the bases, the triangles ABG and DEK are equiangular, and therefore, since DE is three times AB, DK is also three 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 three times CL, which is half of AG.

So that the rectangle EFNP (which is equal to the triangle DEF) is three times as long and three times as high as the rectangle BCLM (which is equal to the triangle ABC). Hence the rectangle EFNP is nine times the rectangle BCLM, and, therefore, the triangle DEF is nine times the triangle ABC.

That is, when

side BC: side EF = 1:3, then, triangle ABC: triangle DEF = 1:3<sup>s</sup>, the triangles being, of course, similar.