

will also be considered *positive*, but forces in the opposite direction will be considered *negative*.

The above results may then be combined into the following :

Their Resultant and

The Resultant of any set of Forces acting on a point in the same line, is the algebraic sum of the Forces.

Condition of Equilibrium

17. Hence also the condition that the point may be kept at rest will be that

The algebraic sum of the Forces shall be zero.

Equal oblique Forces.

18. If two equal forces act in different directions at a point, their Resultant will act in a direction bisecting the angle between their directions.

Any two Forces.

19. *The Principle of the PARALLELOGRAM OF FORCES.*

Parallelogram of Forces.

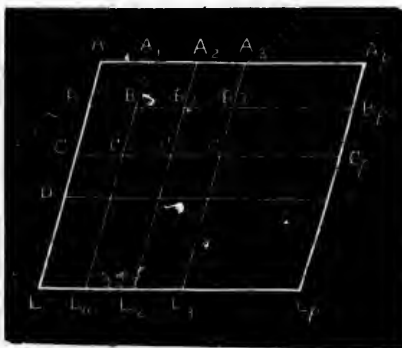
If two Forces acting on a particle be represented in magnitude and direction by two straight lines drawn from a point, and the parallelogram, of which these lines are adjacent sides, be completed, that diagonal which passes through the point will represent in magnitude and direction the Resultant of the two forces.

Newton.

Direction of Resultant.

Let the lines AA_p , AL be drawn representing in magnitude and direction two forces acting at A ; and let p , q be the numbers denoting the magnitudes of the forces.

Duhamel's proof.



Divide AA_p into p equal parts in the points A_1 , A_2 , A_3 ,, and AL into q equal parts in the points B , C , D ,

..... : then each of these equal parts will represent in magnitude the unit force. Through these points, draw lines parallel to