

- ii) Persons sitting on a bench. Fig. 2.7 (b) shows three persons of weights P_1 , P_2 and P_3 sitting on a bench of self weight W . If R_1 and R_2 are the reactions offered by the ground then the six forces form a parallel system.

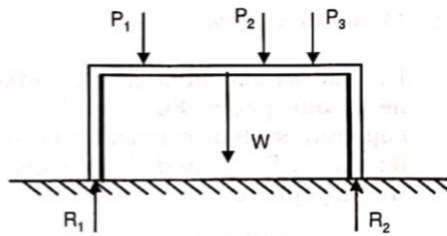


Fig. 2.7 (b)

- c) *General system* : Also known as a 'non-concurrent and non-parallel' system has forces which do not meet at a single point, nor are parallel to each other. For example the forces acting on the rectangular plate form a general system. Refer Fig. 2.8.

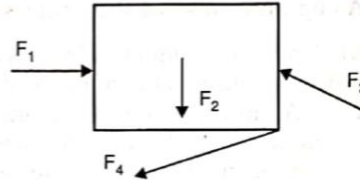


Fig. 2.8

Non-coplanar System

When the forces acting in a system do not lie in a single plane, they are termed as Non-coplanar forces or Space forces. Refer Fig. 2.9.

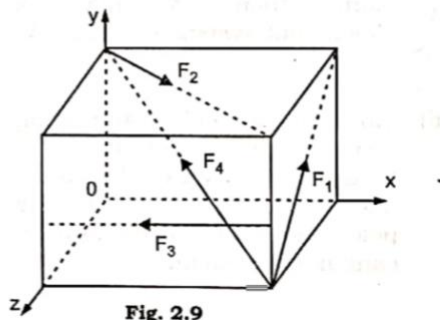


Fig. 2.9

Principle of Transmissibility of Force

It states "A force being a sliding vector continues to act along its line of action and therefore makes no change if it acts from a different point on its line of action on a rigid body". Consider a rigid body as shown in Fig. 2.10, acted upon by a force of magnitude F acting at A . The effect on the body would remain unchanged if it acted from point B , C or any other point on its line of action.

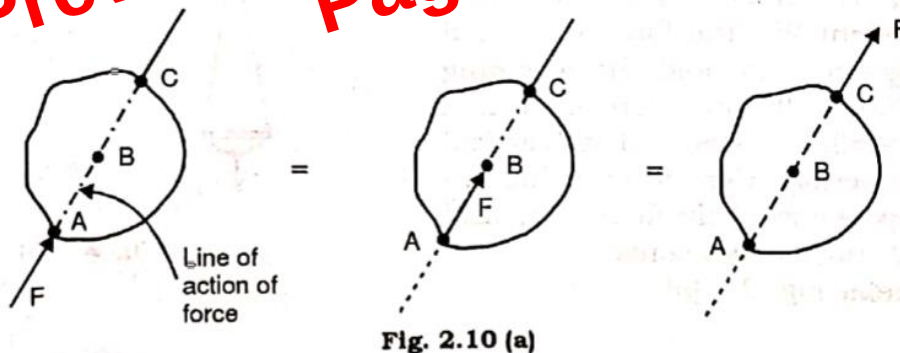


Fig. 2.10 (a)