

*yes* (18) The saddle type of joint is a special arrangement found only in the thumb.

*no* (19) Adduction is a lateral movement away from the central plane of the body.

*no* (20) Abduction is a movement inward toward the central plane of the body.

V. (a) What do we mean by equilibrium? Give your most complete definition.

(b) Since it is impossible to understand the physical principles of total body action without understanding certain governing laws of motion, please give in detail the Newtonian laws: (1) the laws of inertia; (2) the laws of acceleration; (3) the law of reaction.

(c) The levers of the body frequently move in complete unison and with perfect timing in respect to their involved neighbors. For instance, when one climbs the stairs, one's weight is lifted by extension at three articulations simultaneously. Name the articulations and state generally what takes place in such activity at these articulations.

VI. (a) List four of the fundamental manipulative skills.

(b) Explain briefly the three principal types to which all manipulative skills belong.

VII. In the field of selected sports state briefly the types of fundamental manipulative skills to which each of these sports belong, and give at least three general musts, either muscular or mechanical, for the successful performer of each sport. (If you prefer, substitute other sports with which you may be more familiar.)

(a) Archery

(b) Badminton

(c) Tug o' War

VIII. Each figure below represents the base for some couple balancing stunt. The arrow represents the weight line of the top performer. Why is the weight supported more easily by the top figure in each couple?

