

Spinoza's Expositions

Prop. XXI. *If body A is twice as large as B and is moved at an equal speed, A will have twice as much motion as B, that is, the force for maintaining a speed equal to that of B.*

Prop. XXII. *If a body A is equal to body B and A is moved twice as quickly as B, the force or motion in A will be twice that of B.*

Prop. XXIII. *When the modes of a body are forced to undergo a change, that change will always be as small as possible.*

.....

Scholium (to Part Two). *Since these remarks relate to bodies which are called "fluids," it follows that fluid bodies are those which are divided into many tiny particles moved with an equal force in all directions. Although these particles cannot be seen by the keenest eye still what we have now clearly demonstrated should not have to be denied. For such subtlety of nature as cannot be determined or attained by any thought (to say nothing of the senses) is sufficiently overcome by the remarks in Propositions X and XI, Part Two.*

From Spinoza's *The Principles of the Philosophy of Renè Descartes, Demonstrated in the Geometrical Manner*, 1663.

{And the demonstrations of this are so certain that, even if experience were to appear to show us the opposite, we would nevertheless be obliged to place more trust in our reason than in our senses.} [II, 52]

{Indeed, experience often seems to contradict the rules I have just explained.} However, because there cannot be any bodies in the world which are thus separated from all others, and because we seldom encounter bodies which are perfectly solid, it is very difficult to perform the calculation to determine to what extent the movement of each body may be changed by collision with others. For, {before we can judge whether these rules are observed or not}, we must simultaneously calculate the effects of all those bodies which surround the bodies in question and which affect their motion. These effects differ greatly, depending on whether the surrounding bodies are solid or fluid.... [II, 53]