i recently came across a comment that when we push a rubber ball into water filled in a bucket,water level rises because of force applied by our hand (ie more force we apply , the more water rises) .but i do belive its absurd, water rise occur as a function of volume {of our hand} ..

if water level rose with force applied , that would mean if i moved my fingers in water , giving force to the body ,without changing the immersed hand volume , then a water rise would occur.....isnt that creation of water from water.....

PLEaSE ANSWER URGENTLY
PLEASE ITS URGENT

Solution:

As long as we immerse the ball in the water, on it acts our force and the force of push of water (Archimedes force):

$$F = F_a \ (\vartheta = const)$$

$$F_a = \rho g V_1 \ (V - \text{ volume of the submerged part of the ball})$$

Due to extruding of the water from volume V_1, the water level rises by the same amount of volume upwards:

$$V_1 = V_2$$

Hence, until the ball under water immersion, water level rises because of force applied by our hand.

But as soon as the ball is completely submerged under water, Archimedes force continues to act, but it can not push out more volume of water than its own volume. Because of this, the water level ceases to depend on the force with which we are acting on the ball, it only depends on the volume of the immersed body (ball or our hand).

Answer: until the ball under water immersion, water level rises because of force applied by our hand, after the ball is completely in water, the water level does not change, it only depends on the volume of the immersed body (ball or our hand).