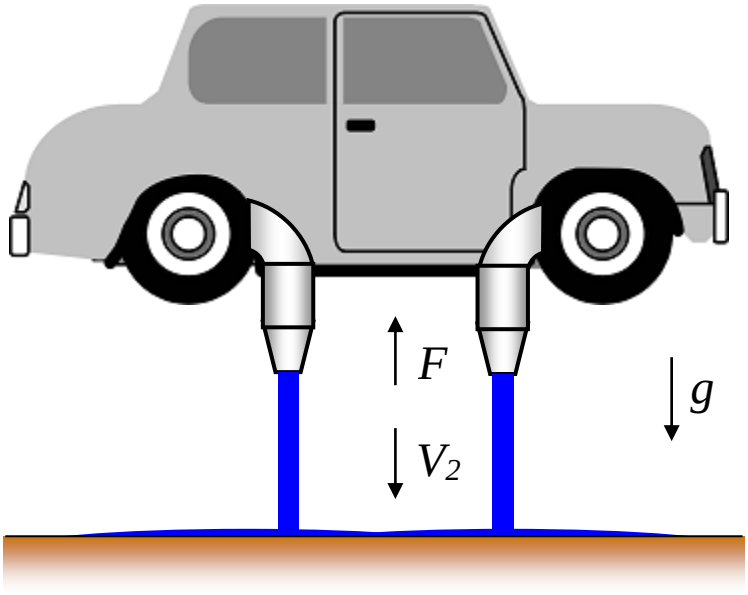
Is it possible to lift a car using fire hoses?

Yes, it is possible, provided there are enough hoses, and a suitable hose geometry is used, one which will generate a force that pushes up on the car. A suitable hose geometry is one in which there is a 90 degree bend between the inlet and the outlet (nozzle). The inlet flow direction must be horizontal and the outlet flow direction must be vertical and pointing down (as shown below). The resulting upward push force F produced by this hose is approximately given by $F = M_F V_2$, where M_F is the mass flow rate of the water, and V_2 is the velocity of the water right after it exits the nozzle. Note that we do not have to know the initial velocity of the water entering the hose (call this V_1). The physics behind this equation is covered in introductory fluid mechanics textbooks.



Car image taken freely from https://openclipart.org

For a given fire hose, let's say we have the following values: M_F = 9 kg/s, and V_2 = 30 m/s. This results in a push force of F = 270 N (27.5 kg). If a car weighs 1 ton then it will take 37 hoses to lift it.

Note: We can calculate mass flow rate with the following formula: M_F = (cross-sectional area of hose inlet)x(density of water)xV_1. Since mass is conserved M_F is also given by M_F = (cross-sectional area of nozzle)x(density of water)xV_2. Since water is incompressible its density is constant and it cancels out when we equate the two M_F formulas given previously. So we have the following useful equation for solving flow problems where the fluid density is constant: (cross-sectional area of hose inlet)xV_1 = (cross-sectional area of nozzle)xV_2.

Can a sailboat stranded in calm water start moving by blowing air into its sail with an onboard fan?

Yes it can provided the fan is strong enough and the shape of the sails allows the air flow to be redirected, as shown in the figure below. The backward moving air (accelerating in the backward direction) will push forward on the sailboat, moving the sailboat forward (Newton's third law). The same effect will be produced if the fan is pointing backward and blows air in the backward direction.

The shape of the sail must be such that it redirects the air flow so that it goes in the direction opposite to the desired direction of travel of the sailboat