

Fluid Mechanics Hw 2.2

05/26/24

3.6

The value of the absolute pressure will always be greater than that for the gage pressure.

- This is True, because in an ideal perfect vacuum situation, gage pressure is measured relative to the atmospheric pressure. Meaning if P_{atm} goes up the overall absolute pressure will go up. That is shown in this $P_{abs} = P_{gage} + P_{atm}$

3.7

As long as you stay on the surface of the Earth, the atmospheric pressure will be 14.7 psia.

3.8

This is false, because 14.7 psia is the approximation of atmospheric pressure at sea level. Pressure changes at different levels it depends on the altitude. That goes for higher up altitudes and lower altitudes.

3.8

The pressure in a certain tank is -53.6 Pa (abs)

This is false, because absolute pressure cannot be negative. Since it is measure relative to a perfect vacuum (0 Pa) For the absolute pressure to be negative makes no sense

3.9 The pressure in a certain tank is -4.65 psig

This is true, Gauge pressure is relative to atmospheric pressure. That means that if the gauge is negative, it is lower than the atmospheric pressure at that location.