The pressure at 10 m below the surface of the ocean is about 2.0×10^5 Pa. Which of these statements is true?

a) The weight of a column of seawater 1 m^2 in cross section and 10 m high is about 2.0×10^5 N

b) The weight of a column of seawater 1 m^2 in cross section and 10 m high plus the weight of a column of air with the same cross section extending up to the top of the atmosphere is about 2.0×10^5 N

c) The weight of 1 m^3 of seawater at 10 m below the surface of the ocean is about 2.0×10^5 N

d) The density of seawater is about 2.0×10^5 N times the density of air at sea lavel.

It depends on if you are talking about gauge pressure or total pressure.

a) The weight of a column of seawater 1 m^2 in cross section and 10 m high is about 2.0×10^5 N

This is for gauge pressure, which takes into account the surrounding air pressure, and only reads off pressure above air pressure.

b) The weight of a column of seawater 1 m^2 in cross section and 10 m high plus the weight of a column of air with the same cross section extending up to the top of the atmosphere is about 2.0×10^5 N

This is total pressure, which takes into account the pressure of everything above a certain height.

A 9 m x 24 m x 3 m high pool is filled with water. What is the pressure on the bottom of the pool due to the water?

2.94×10^4

Pressure = density * g * h

Remember to convert your units!

$P = (1\ g/cm^3)(1\ kg/1000\ g)(100\ cm/1m)^3(9.8\ m/s^2)(3\ m)$