Number of moles of H_2O in the ocean

The volume of the ocean has been estimated to be 1.33×10^9 km^3. How many moles of H_2O are in the ocean? You may assume that the density is 1.01 gm/cm^3.

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How many moles of H_2O are in the ocean?

Solution: the number of moles can be calculated using the formula:

$$n = \frac{\rho V}{M_m}$$

Thus,

$$n = \frac{\left(10^6 \frac{gm}{m^3}\right)(1.33\ x\ 10^{18}\ m^3)}{18\ gm/mol}$$

Which gives

$$n = 7.39\ x\ 10^{22}\ moles$$