Experimentally, we know that the vapor pressure of the solvent above a solution containing a non-volatile solute (i.e., a solute that does not have a vapor pressure of its own) is directly proportional to the mole fraction of solvent in the solution. This behavior is summed up in *Raoult's Law*:

$$P_{solvent} = X_{solvent}P^o_{solvent}$$

where:

$P_{solvent}$ is the vapor pressure of the solvent above the solution,

$X_{solvent}$ is the mole fraction of the solvent in the solution,

$P^o_{solvent}$ is the vapor pressure of the pure solvent.

From reference data P^0= 0.6 kPa at 0 C
P must be 0.5 kPa,so X is next:
0.5=x*0.6
x=0.8333,so
n of water = 100/18 = 5.55 mol
n of urea = x/(5.55+x)= (1- 0.8333)
x = 1,11 mol
Mw of urea = 60
m = n*Mw = 60 * 1,11 = **6.66 g**