### Exercise: Reservoir Pressure

3 wells were drilled in a reservoir structure as illustrated



Gas, oil and water were detected according to Table 1.

***Table 1 Pressure test results***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Well nr | Top Reservoir (m) | Bottom Reservoir (m) | Pressure at the Test Point (kPa) | Depth at the Test Point (m) | Fluid type | Density (kg/m3) |
| 1  2  3 | 2358  2512  2715 | 2458  2612  2815 | 27360  28090  29440 | 2404  2561  2730 | gas  oil  water | 232  648  1038 |

1. Calculate pressure gradients in gas, oil and water zones
2. What are the min and max gas-water contacts after 1st well? Assume hydrostatic pressure in water zone with a gradient of 10.17 kPa/m
3. Calculate gas-oil contact after 2nd well
4. What are the min and max oil-water-contact after 2nd well? Assume hydrostatic pressure in water zone as above
5. Calculate oil-water-contact after 3rd well and calculate the overpressure in the water zone