

**HW#6****Assigned:** January 22, 2009**Due:** January 29, 2009

Please review the following articles on packing of uniform-sized spheres.

[Weisstein, Eric W.](http://mathworld.wolfram.com/SpherePacking.html) "Sphere Packing." From [MathWorld](http://mathworld.wolfram.com/)--A Wolfram Web Resource.

<http://mathworld.wolfram.com/SpherePacking.html>

[Weisstein, Eric W.](http://mathworld.wolfram.com/HexagonalClosePacking.html) "Hexagonal Close Packing." From [MathWorld](http://mathworld.wolfram.com/)--A Wolfram Web Resource.

<http://mathworld.wolfram.com/HexagonalClosePacking.html>

[Weisstein, Eric W.](http://mathworld.wolfram.com/CubicClosePacking.html) "Cubic Close Packing." From [MathWorld](http://mathworld.wolfram.com/)--A Wolfram Web Resource.

<http://mathworld.wolfram.com/CubicClosePacking.html>

Based on the equations presented in these articles, use the values provided in class as needed.

Assume a sphere radius of 10 micrometers. In the following, include the changes to the porosity, the changes to the rock matrix, and the changes to the fluid.

- a) Discuss the effects of increasing the pore pressure by 1,000 psi
- b) Discuss the effects of decreasing the pore pressure by 1,000 psi
- c) Discuss the effects of increasing the temperature of the whole system by 100 °F
- d) Discuss the effects of decreasing the temperature of the whole system by 100 °F
- e) Discuss the effects of increasing the pore pressure by 1,000 psi and increasing the temperature of the whole system by 100 °F
- f) Discuss the effects of decreasing the pore pressure by 1,000 psi and decreasing the temperature of the whole system by 100 °F