**COMP 1587 - CS1 - Mobile Communications: Exercises**

1. Consider a geographical area divided (for mobile phone coverage purposes) into 36 hexagonal cells, without gaps or overlaps between them. Each cell has a radius of 2 km. The reuse factor is 5. There are 350 channels in total.

i) What is the total area covered?

**5.1km2 36\*5.1 = 183.6km2**  
 ii) What is the number of channels per cell?

350/5 = 70 channels per cell  
 iii) What is the maximum number of concurrent calls that can be handled?

36\*70 =2520  
 iv) Would the answers to (i), (ii) or (iii) change if the radius of each cell was 1 km and there were 144 cells in total?

1. **2.6km2 93.6km2**
2. **28.8**
3. **36\*28.8 1036.8**