

**Higher – E&F–HW 5**

1. A researcher modelled the size  $N$  of a colony of bacteria  $t$  hours after the beginning of the observations by  $N(t) = 950 \times (2.6)^{0.2t}$ 
  - (a) What was the size of the colony when the observations began?
  - (b) How long does it take for the size of the colony to be multiplied by 10?
  
2. A, B and C have co-ordinates (2,-3,4), (10,5,0) and (12,7,-1)
  - (i) Write down the components of  $\overrightarrow{AC}$ .
  - (ii) Hence show that the points A, B and C are collinear.