US5256 SUMMARY REVISION

1. Each day, Jack's beanstalk has gained ¼ of the previous day's growth. If it grew 15 metres in its first day after germination, how tall was it after two weeks?

2. A tennis ball is dropped from a height of x metres.   Each time it bounces upwards by $^2/_3$ of the distance through which it has just fallen. Calculate the value of x, if the total distance the tennis ball travels is 12 metres.

3. For each expression, solve for x:

   a. $3^x = 23$

   b. $2.86^x = 8$

   c. $38^x = 740$

   d. $8^{2x} = 78$

   e. $0.72^{4x} = 11$

   f. $2.8^{x+3} = 23$

4. Use the Binomial Theorem to expand

   a. $(x + 2)^5$

   b. $(3 - x)^7$

   c. $(3x - 2)^4$

   d. $(x - 2x^{-1})^5$

   e. $(x^2 + 3)^6$

5. Use the Binomial Theorem to determine the stated terms for each of the following expansions:

   a. $(2x + 5)^4$ The third term

   b. $(x - 3)^8$ The sixth term

   c. $(9 - x)^7$ The fifth term

   d. $(7 + 3x^2)^6$ The third term

6. What is the coefficient of x^{-1} in the expansion of $(x + 3x^{-3})^7$