Binomial Theorem Worksheet 2

1. Determine the 5th term of $(5x + b^2)^7$.
2. Calculate the last term of $(6x + 9)^5$.
3. Find the third term of $(7x + 2)^5$.
4. Determine the 3rd in the expansion of $(4x + 2b^2)^6$.
5. Show that $9^{n+1} – 8n – 9$ is divisible by 64, whenever n is a positive integer.
6. Which is larger $(1.01)^{1000000}$ or 10,000?
7. Find numerically the greatest term in the expansion of $(2 + 3x)^9$, where x = 3/2.
8. Which of the following is larger?
   $99^{50} + 100^{50}$ or 101^{50}
9. Find the total number of terms in the expansion of $(x + a)^{51} – (x – a)^{51}$ after simplification.
10. Find $(a + b)^4 – (a – b)^4$. Hence, evaluate $(\sqrt{2} - \sqrt{3})^4 - (\sqrt{2} + \sqrt{3})^4$.