Discriminant and Binomial Expansion practice

Find the discriminant of each quadratic equation then state the number and type of solutions.

1) $7x^2 + x + 5 = -3x$

2) $3n^2 - 5n + 16 = -2n + 7$

3) $-x^2 - 12 = -6 + 5x^2 - 5x$

4) $-a^2 + a + 5 = -1$

5) $-3b^2 - 10b = 8$

6) $-2m^2 + 3 = 8m + 6m^2 + 5$

Find each term described.

7) 3rd term in expansion of $(x + y)^4$

8) 2nd term in expansion of $(3x - y)^4$

9) 4th term in expansion of $(1 + 3m)^4$

Find each coefficient described.

10) Coefficient of y^2 in expansion of $(4y + 1)^4$

11) Coefficient of x^2 in expansion of $(5x + 1)^3$

12) Coefficient of n^2 in expansion of $(2n + 1)^3$