

Arithmetic with Polynomials - Worksheet 5

1. Use Pascal's Triangle to expand $(x + y)^5$.
2. Write out all combinations of 2 x 's and 2 y 's.
3. If you flip a coin 20 times, in how many ways can you get 7 heads?
4. Use Pascal's Triangle to expand $(2x - 3y)^4$.
5. A woman plans to have four children. Assuming each child is either male or female, write out all the different possibilities of having boys and girls in the different orders. How many possibilities is this?
6. A train has 15 cars, all of which are either red or blue. In how many ways can red and blue cars be ordered?
7. Explain why summing the n th row of Pascal's Triangle results in 2^n .
8. What is the coefficient of x^3y^2 in the expansion of $(-x + 2y)^5$?
9. In the expansion of $(-3a + 4b)^8$, which terms containing the following are possible - $a^2b^3, a^5b^3, ab^8, b^8, a^4b^4, a^8, ab^7, a^6b^5$.
10. In the expansion of $(-3a + 4b)^8$, what is the probability of getting 5 a 's and 3 b 's?

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