

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

1) Evaluate $\binom{9}{4}$. 1) _____

2) Evaluate $\binom{15}{13}$. 2) _____

3) Evaluate $\binom{8}{0}$. 3) _____

4) Evaluate $\binom{6}{1}$. 4) _____

5) Find the coefficient of $a^7 b^3$ in $(a + b)^{10}$. 5) _____

6) Determine the first three terms in the binomial expansion of $(x + y)^{12}$. 6) _____

7) Calculate: $\binom{8}{0} + \binom{8}{1} + \binom{8}{2} + \binom{8}{3} + \binom{8}{4} + \binom{8}{5} + \binom{8}{6} + \binom{8}{7} + \binom{8}{8}$ 7) _____

A pizza parlor offers onions, green peppers, pepperoni, olives and sausage as topping for the plain cheese base.

8) How many different types of pizza can be made? 8) _____

9) How many subsets does $\{a, e, i, o, u, y\}$ have? 9) _____

10) How many subsets of the set $\{a, b, c, d, e, f\}$ do not contain the letter "d"? 10) _____

Solve the problem.

11) A population of crabs that eats algae lives in a bay. In the bay there are five kinds of algae. A biologist wants to find out which types of algae are eaten by the crabs. If the biologist examines the stomach contents of the crabs, how many possibilities are there for the kinds of algae he will find? 11) _____