Exam

Name_____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Evaluate the expression.

1) ${}_6C_1$ 1) _____

A) 240 B) 720 C) 3 D) 6

2) ${}_8C_0$ 2) _____

A) 10,080 B) 40,320 C) 20,160 D) 1

3) ${}_7C_7$ 3) _____

A) 1 B) 5040 C) 0 D) 7

4) $\frac{{}_7C_4}{{}_7P_4}$ 4) _____

A) 4 B) $\frac{1}{4}$ C) $\frac{1}{24}$ D) 24

5) $\frac{{}_9C_5}{{}_9C_2}$ 5) _____

A) $\frac{1}{60}$ B) $\frac{7}{2}$ C) $\frac{2}{7}$ D) $\frac{2}{5}$

6) $\frac{{}_9P_4}{{}_{10}C_7}$ 6) _____

A) $\frac{126}{5}$ B) $\frac{5}{126}$ C) $\frac{1}{200}$ D) 252

7) $\frac{{}_7C_7}{{}_7P_0}$ 7) _____

A) $\frac{1}{7}$ B) 7 C) 5040 D) 1

Solve the problem.

8) How many ways can a committee of 2 be selected from a club with 12 members? 8) _____

A) 33 B) 66 C) 2 D) 132

9) In how many ways can a student work 6 out of 10 questions on an exam? 9) _____

A) 210 B) 1,000,000 C) 5040 D) 24

10) How many ways can a committee of 5 be selected from a club with 10 members? 10) _____

A) 30,240 B) 50 C) 100,000 D) 252

11) If the police have 9 suspects, how many different ways can they select 5 for a lineup? 11) _____

A) 3024 B) 45 C) 126 D) 15,120

12) In how many ways can a group of 9 students be selected from 10 students? 12) _____

A) 9 B) 10 C) 1 D) 90

13) Three noncollinear points determine a triangle. How many triangles can be formed with 8 points, no three of which are collinear? 13) _____

A) 336 B) 56 C) 6720 D) 24

14) A bag contains 7 apples and 5 oranges. If you select 6 pieces of fruit without looking, how many ways can you get 6 apples? 14) _____

A) 12 B) 7 C) 35 D) 14

15) A bag contains 6 apples and 4 oranges. If you select 5 pieces of fruit without looking, how many ways can you get 5 oranges? 15) _____

A) 24 B) 6 C) 10 D) 0

16) A bag contains 9 apples and 7 oranges. If you select 8 pieces of fruit without looking, how many ways can you get exactly 7 apples? 16) _____

A) 3528 B) 72 C) 504 D) 252

17) How many different three–digit numbers can be written using digits from the set {3, 4, 5, 6, 7} without any repeating digits? 17) _____

A) 120 B) 20 C) 60 D) 10

18) How many 5–card poker hands consisting of 3 aces and 2 kings are possible with an ordinary 52–card deck? 18) _____

A) 12 B) 288 C) 24 D) 6

19) Bob is planning to pack 6 shirts and 4 pairs of pants for a trip. If he has 13 shirts and 7 pairs of pants to choose from, in how many different ways can this be done? 19) _____

A) 60,060 B) 60,150 C) 60,118 D) 59,820

20) If you toss five fair coins, in how many ways can you obtain at least one head? 20) _____

A) 16 B) 31 C) 15 D) 32

21) If you toss six fair coins, in how many ways can you obtain at least two heads? 21) _____

A) 64 B) 57 C) 63 D) 58

22) If you toss four fair coins, in how many ways can you obtain at least one head? 22) _____

A) 4 B) 5 C) 16 D) 15

23) If a license plate consists of four digits, how many different licenses could be created having at least one digit repeated. 23) _____

A) 4960 B) 10,000 C) 3024 D) 5040