

PMATH 12 - CHAPTER 8 - PRETEST

signature: _____

Multiple Choice - PART 1 - NON-CALCULATOR - 10 MINUTES (#1-5)

CIRCLE the choice that best completes the statement or answers the question.

1. At a school cafeteria, a meal consists of a main dish, a side dish, and a dessert. There are 3 main dishes, 4 side dishes, and 7 desserts to choose from. How many different meals are possible?

- A. 36
- B. 84
- C. 45
- D. 14

2. Which expression cannot be evaluated?

- A. ${}_8P_6$
- B. ${}_{10}P_0$
- C. ${}_9P_9$
- D. ${}_{12}P_{14}$

3. How many permutations are there of the 5 digits in the number 85 697?

- A. 120
- B. 20
- C. 24
- D. 5

4. What is the value of $\binom{8}{3}$?

- A. 56
- B. 3
- C. 24
- D. 8

5. What are the first three terms in the expansion of $(x + 8)^{11}$?

- A. $x^{11} + 8x^{10} + 64x^9$
- B. $x^{11} + 11x^{10} + 55x^9$
- C. $x^{11} + 88x^{10} + 3520x^9$
- D. $x^{11} + 80x^{10} + 2880x^9$

MULTIPLE CHOICE - PART 2 - CALCULATOR may be used after 10 minutes

6. A multiple-choice test has 12 questions. Each question has 6 choices: A, B, C, D, E, or F. How many ways can the test be answered?

- A. 2 985 984
- B. 18
- C. 72
- D. 2 176 782 336

7. How many different numbers can be formed by rearranging the digits in 28 759 143?

- A. 36
- B. 5040
- C. 40 320
- D. 8

8. Which of these words has exactly 90 720 permutations of all its letters?
- | | |
|---------------|-----------------|
| A. PERIDOTITE | C. SERPENTINITE |
| B. SANDSTONE | D. GRANITE |
9. A student has 12 different books on her bookshelf. She wants to take 6 of them with her on a train trip. How many selections of 6 books could she make?
- | | |
|------------|--------|
| A. 665 280 | C. 924 |
| B. 720 | D. 72 |
10. What is the value of the 6th number in row 11 of Pascal's triangle?
- | | |
|-----------------|-----------------|
| A. ${}_{10}C_5$ | C. ${}_{11}C_6$ |
| B. ${}_{12}C_7$ | D. ${}_5C_{10}$ |
11. Which row of Pascal's triangle contains the expression ${}_{15}C_6$?
- | | |
|-----------|-----------|
| A. row 15 | C. row 16 |
| B. row 14 | D. row 6 |
12. What are the first three terms in the expansion of $(-3x^4 + 2)^5$?
- | |
|--|
| A. $-243x^{20} + 162x^{16} - 108x^{12}$ |
| B. $-243x^{20} + 810x^{16} - 1080x^{12}$ |
| C. $-243x^5 + 810x^4 - 1080x^3$ |
| D. $x^5 + 5x^4 + 10x^3$ |

Short Answer - Show your work

- Postal codes in Canada have six characters. They have the form A0A 0A0, where A is a letter and 0 is a digit. The letters D, F, I, O, Q, and U are not used. How many different postal codes are possible?
- At a bus stop, 8 passengers get on a bus with 4 empty seats. In how many different ways can some of these passengers be seated?

3. Which of these words has the greater number of permutations of all its letters? BEAN or BEEN
work

answer

4. How many 13-digit numbers can be created from the digits 7,7,7,1,1,1,1,5,5,5,5,5?

5. Solve this equation for n : ${}_n C_3 = 84$

6. Expand $(5x - 2)^6$.

Problem - Show your work

1. Five couples go to see a movie. They sit together in 10 consecutive seats and couples sit together. How many seating arrangements are possible?
work

answer

2. A hand of 7 cards is dealt from a standard deck of 52 playing cards. How many hands of 3 hearts and 4 black cards can be dealt?
work

answer

3. Expand $(5x + 3y)^5$.