**Topic 1**

**MULTIPLICATION AND DIVISION OF POLYNOMIALS**

**1. Recognition**

**1:** Give . The value of then  is:

**A. ** **B. ** **C. ** **D. **

**2:** Given  two different numbers, satisfying the condition:.

Then we have:

**A. ** **B. ** **C. ** **D. **

**3.** The value of the expression  at  is:

**A. ** **B. ** **C. ** **D. **

**4:** The smallest value of the expression  is:

**A. ** **B. ** **C. ** **D. **

**5.** For polynomials  and . We have  when and only when

**A. ** **B. ** **C. ** **D. **

**6.** Determine the coefficients  and  such that the polynomial  is divisible by the polynomial . The values to look for are:

 **B. ** **C. ** **D. **

**7.** For polynomials . Which of the following equations is true?

**A. **

**B. **

**C. **

**D. **

**8.** How many values of an integer  such that the polynomial  can be analyzed  as  integers and .

**A.** No value **B.** Have  value

**C.** Have  value **D.** Have  value

**III. Multiple choice exercises**

**1. Recognition**

**1.** Determine the coefficients  knowing that  for every . The values to look for are:

**A. ** **B. ** **C. ** **D. **

**2.** Give . The value of then  is:

**A. ** **B. ** **C. ** **D. **

**3.** The smallest value of the expression  is:

**A. ** **B. ** **C. ** **D. **

**4.** The largest value of an expression  is:

**A. ** **B. ** **C. ** **D. **

**5.** Giving  and ;  then the value of the expression  is:

**A. ** **B. ** **C. ** **D. **

**6.** Given . Which equation is correct?

**A. ** **B. **

**C. ** **D. **

**7.** Polynomials  are broken down into:

**A. **

**B. **

**C. **

**D. **

**8.** For polynomials . Which answer is correct?

**A.** Polynomials  cannot analyze the performance of two polynomials with integer coefficients

**B.** Polynomial analyzes the performance of two quadratic triangles with integer coefficients

**C.** Polynomials  analyze the performance of the four first-order binomials with integer coefficients

D. Polynomial  analyzes the performance of a first-order binomial with a tertiary polynomial with an integer coefficient

**2. Understanding**

**1.** Given which equation is correct?

**A. ** **B. **

**C. ** **D. **

**2.** The smallest value of the expression  is:

**A. ** **B. ** **C. ** **D. **

**3.** The greatest value of the expression  is:

**A. ** **B. ** **C. ** **D. **

**4.** Giving and ;  then the value of the expression  is:

**A. ** **B. ** **C. ** **D. **

**5.** Given  that the value of the expression  is:

**A. ** **B. ** **C. ** **D. **

**6.** Polynomials  are broken down into:

**A. **

**B. **

**C. **

**D. **

**7.** Polynomials  are broken down into:

**A. **

**B. **

**C. **

**D. **

**8.** Which equation is correct?

**A. **

**B. **

**C. **

**D. **

**3. Application**

**Question 1.** The value of polynomials  at  is

**A. ** **B. ** **C. ** **D. **

**Question 2.** In the following clauses, how many propositions are true?

; Numbers exist  so that ; ;

If  you divide it all  , you  will also divide it all .

**A.** Have  True Clause **B.** Have  True Clause

**C.** Have  True Clause **D.** Total  The clause is all true

**Question 3.** How many false clauses are there in the following clauses?

If it  is divided by all  , it  is also divided by 13;

In four consecutive odd numbers, the product of the last two digits with the product of the first two digits is divisible by ; The last two digits of the number  are ; The number  is not the square number.

**A.** Have  false clause **B.** Have  false clause

**C.** Have  false clause **D.** Total  The propositions are all wrong

**Question 4:** The smallest value of the expression  is:

**A.**-35 **B.** -34 **C.** -37 **D.** -36

**Question 5:** A  valid expression is:

**A.**1 **B.** -1 **C.** -2 **D.** -3

**Question 6:** How many digits does a number have at the end of 0?

**A.**Has 1 digit 0 **B.**Has 2 digits 0 **C.**Has 3 digits 0 **D.**Has 4 digits 0

**Question 7:** How many false clauses are there in the following clauses? The number  is divided by 60; The number  is divided by 80; The number  is divided by 200; Number divisible by 40

**A.**There is 1 false proposition **B.**There are 2 false propositions

**C.**There are 3 false propositions **D.**There is no wrong clause

**Question 8:** The numbers x and y are different and satisfy the condition: . Then the value of the expression  is:

**A.**2 **B.** 1 **C.** 4 **D.** 3

**4. Advanced application**

**Question 1:** How many correct clauses are there in the following clauses?

The numbers a, b, c satisfy the conditions  , 

The expression  is always positive for every x; The expression  is always positive for every x, y is not simultaneously equal to 0; The expression  is always negative for every x.

**A.**There is 1 correct proposition **B.**There are 2 correct propositions

**C.**There are 3 correct propositions **D.**All 4 propositions are true.

**Question 2:** How many of the following clauses are correct?

If two even numbers are 4 units apart from each other, their squares are divisible by 16; If two numbers are 6 units less than each other, their squares are divided by 24; Give  it.  Given that  a, b, and c are the three-sided lengths of a right triangle.

**A.**There is 1 correct proposition **B.**There are 2 correct propositions

**C.**There are 3 correct propositions **D.**All 4 propositions are true.

**Question 3:** Let x, y satisfy the conditions:

 then the values of x, y are:

**A.** **B.** **C.** **D.**

**Question 4:** How many digits does a number have at the end?

**A.**Has 1 digit 0 **B.**Has 2 digits 0 **C.**Has 3 digits 0 **D.**Has 4 digits 0

**Question 5:** Which  equation is correct?

**A.**. **B.**.

**C.**. **D.**.

**Question 6:** Given that polynomial is the square of a polynomial when

**A.** **B.** **C.** **D.**

**Question 7:** How many of the following clauses are true?

The number is divided by 41; The number  is divided by 2018; The  number is not divisible by 23; A number  is the product of two consecutive integers.

**A.**There is 1 correct proposition **B.**There are 2 correct propositions

**C.**There are 3 correct propositions **D.**All 4 propositions are true.

**Question 8:** How many of the following clauses are correct?

The  number with the end is 3 digits 0; The number  is divided by 100; The cube of an integer minus that integer is divisible by 6; If the sum of 3 integers is divisible by 6, then the sum of their powers is also divisible by 6.

**A.**There is 1 correct proposition **B.**There are 2 correct propositions

**C.**There are 3 correct propositions **D.**All 4 propositions are true.

**Question 9:** Polynomials are analyzed into:

**A.**

**B.**

**C.**

**D.**

**TOPIC 2: ALGEBRAIC FRACTION**

1. **For** example, for , shorten the fraction 
2. Perform calculations



1. For . Prove that:



**4. The** result of the total: is:

**A.** **B.** **C.** **D.**

**5.**  Sum result:

be

**A.** **B.** **C.** **D.**

**6.** After performing the calculation, the expression:

Valid for

**A.** **B.** **C.** **D.**

**7.** Expressions

are valued as:

**A.** **B.** **C.** **D.**

**8.** For 

Then the value of the expression:  is:

**A.** **B.** **C.** **D.**

**9.** Give . The value is then  received:

**A.**. **B.**.

**C.**. **D.**.

**10.** The values of M, N that satisfy  all the values of x are:

**A.** **B.** **C.** **D.**

**11.** Give . Which affirmation is true?

**A.** **B.** **C.** **D.**

**1. Recognition**

**Question 1:** The defined-set solution is:

**A.** **B.** **C.** **D.**

**Question 2:** The calculation  with a definite set (TXD) is:

**A.**For every x, y **B.**For every  **C.**For every  **D.**For every 

**Question 3:** For fractions:



Which fraction has the smallest value?

**A.**Fraction R **B.** Fraction S **C.** Fraction P **D.** Fraction Q

**Question 4:** After reducing the fractions, how many correct results are there?



**A.** There is 1 correct proposition **B.** There are 2 correct propositions

**C.**There are 3 correct propositions **D.**All 4 propositions are true.

**Question 5:** After performing calculations, expressions:

 abbreviated as:

**A.** **B.** **C.** **D.**

**Question 6:** After performing calculations, expressions:

 abbreviated as:

**A.** **B.** **C.** **D.**

**Question 7:** Shorten  the expression

**A.** **B.** **C.** **D.**

**2. Understanding**

**Question 1:** In the numbers: 

, how many pairs of equal numbers are there?

**A.** Has 1 pair **B.**There are 2 pairs **C.**There are 3 pairs **D.**There are 4 pairs

**Question 2:** Give two fractions: Which affirmation is true?

**A.**P = Q **B.**P > Q **C.**P < Q **D.**P.Q > 1

**Question 3:** Of the following results, how many are correct?

The expression  has a value that does not depend on the yvariable; The expression has a value that does not depend on the variable x; The expression  has a value that does not depend on the z variable; Expression

 whose value does not depend on the variable x

**A.**There is 1 correct proposition **B.**There are 2 correct propositions

**C.**There are 3 correct propositions **D.**All 4 propositions are true.

**Question 4:** After performing calculations, expressions:

 abbreviated as:

**A.** **B.** **C.** **D.**

**Question 5:** For the expression:

.

Which affirmation is true?

**A. The** value of the expression P depends only on the variable x

**B.** The value of the expression P depends only on the variable y

**C. The** value of the expression P depends only on the z variable

**D. The** value of the expression P does not depend on the variables x,y, z

**Question 6:** The result of the calculation  is:

**A.** **B.** **C.** **D.**

**Question 7:** A definite set of fractions  is:

**A.** For every x, y **B.**With every x and 

**C.**For all the yas and  **D.**For every  and with every 

**3. Application**

**Question 1:** With n being the natural number, how many minimalist fractions are there in the following fractions?



**A.** Has 1 fraction **B.** Has 2 fractions

**C.**There are 3 fractions **D.**There are 4 fractions

**Question 2:** In the following equations, how many false results are there?



**A.**There is 1 wrong result **B.**There are 2 wrong results

**C.**There are 3 false results **D.**There are 4 false results

**Question 3:** Give . Then the value of the expression:



**A.** **B.** **C.** **D.**

**Question 4:** Tick  is:

**A.** **B.** **C.** **D.**

**Question 5:** The  most valuable fraction is:

**A.**5 **B.**10 **C.**1 **D.**3

**Question 6:** The fraction  with the smallest value is:

**A.**-8 **B.**-2 **C.**-5 **D.**-1

**Question 7:** Shortening the expression  gives us which result is correct?

**A.** **B.** **C.** **D.**

**4. High applicability**

**Question 1:** Give . Then the value of the fraction  is:

**A.**. **B.**.

**C.**. **D.**.

**Question 2:** Give . Then the value of the expression  is:

**A.** **B.** **C.** **D.**

**Question 3:** Give . How many different values can an expression get?

**A.**Countless different values **B.**There are 4 different values

**C.**There are 2 different values **D.**All three of the above answers are wrong

**Question 4:** Valuable products  are:

**A.** **B.** **C.** **D.**

**5.**  Valuable credits  are:

**A.** **B.**

**C.** **D.**

**6.** Give ; ; . Which affirmation is true?

**A.** **B.**

**C.** **D.**

**7.** Give  and , ,  double one different. Considering ; ; . Which affirmation is true?

**A.**Product whose value is always a constant

**B.** Accumulating  a multitude of different values, depending on the values of the variables , , 

**C.** Product get two different values, depending on the value of the variables , , 

**D.** Accumulating three different values, depending on the values of the variables , ,  