

Mathematics Test

Chapter 10: Algebraic Expressions

Maximum Marks: 15

Time: 30 minutes

A. Choose the correct option: [$1 \times 5 = 5$]

1.	Identify the binomial out of the following:						
(a)	$3xy^2 + 5y - x^2y$	(b)	$x^2y - 5y - x^2yp$	(c)	$xy + yz + zx$	(d)	$7xy^2 + 6y - y^2x$

2.	Which of the following pair of terms is a pair of unlike terms?						
(a)	$7a^2bc, 21cba^2$	(b)	$12abc, 17bac$	(c)	$7pq^2r^3, 14q^2p^3r$	(d)	$14a, 22a$

3.	Factors of the term $-17x^3y^2z$ are						
(a)	$-17 \times x \times x \times x \times y \times y \times z$	(b)	$-17 \times x \times y \times y \times y \times z \times z$	(c)	$-17 \times x \times x \times x \times y \times y \times z \times z$	(d)	$-17 \times x \times x \times x \times x \times y \times z \times z$

4.	The value of $3x^2 - 5x + 3$ when $x = (-1)$ is						
(a)	1	(b)	11	(c)	10	(d)	5

5.	Assertion(A): $-ab^3 + 3x^2 - \frac{2}{y^3}$ is a trinomial. Reason(R): A polynomial is an algebraic expression that involves constants, variables and mathematical operations and terms having non – negative integer powers.					
(a)	Both A and R are correct and R is the correct explanation of A.					
(b)	Both A and R are correct but R is not the correct explanation of A.					
(c)	A is true but R is false.					
(d)	A is false but R is true.					

B. Answer the following questions:

1. Draw the factor tree diagram of the following algebraic expression: [2]

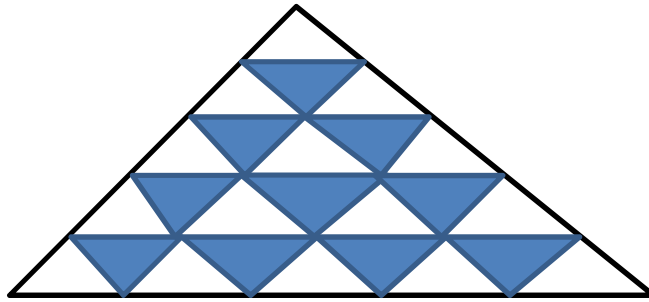
$$23x^2yz^3 - a^3bp + 11z^3x - p^2q^2r^2 + 27$$

2. Simplify: $(3p^3 + q^2 - 24r) - (p^2 + 25q^2 + 13r) + (p^2 + 2pq - q^2)$ [2]

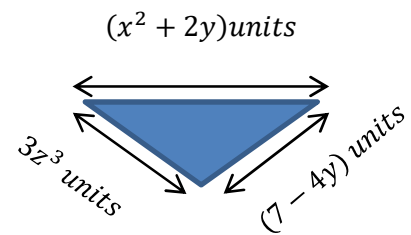
3. Find the value of the following polynomial for $m=2, n= (-3), p=4, q= (-5)$ [2]

$$m^2n^2 + n^2p^3 - q^2 + 3mnq$$

CASE STUDY



Inside the big triangle, there are few identical blue smaller triangles. The expressions representing the three different sides of the blue triangles are given aside.



1. Find the algebraic expression representing the perimeter of each blue smaller triangle. [1]
2. What is the coefficient of $(-y)$ in the above expression of question no. 1? [1]
3. Find the total value of the perimeter of all blue smaller triangles for $x = (-1)$, $y = 4$ and $z = 5$ [2]