FUNDAMENTAL CONCEPTS OF ALGEBRA

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Q1. Match the following statements with the correct mathematical expression:

10 times x decreased by 7	$x - 1$
Number preceding x	$2a - m$
m taken away from twice of a	$x^2 + 7$
Square of x added to 7	$10x - 7$

Q2. Rakesh's salary is 2000 less than Amit's salary. If Amits' salary is x, and Rakesh's salary is y, write an algebraic expression to calculate Rakesh's salary.

Answer: _____

Q3. Identify the number of terms in each of the following algebraic expressions. Fill in the blanks with monomial, binomial or trinomial:

Expression	No. of terms	Type of expression
a. $2x^2y$	____	_____
b. $7xy - 2ab$	____	_____
c. $3a + 4b - 6abc$	____	_____
d. $3xyz$	____	_____

Q4. Which of the following expressions are not polynomials?

a. $\dfrac{3}{4}x^2 yz + 9x$

b. $\dfrac{1}{x} + 3xyz$

c. $\dfrac{2}{3}x - \dfrac{5}{7}xyz$

d. $\dfrac{1}{pqr} + p^2 q$

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Q5. Identify the like and unlike terms from the following:

Terms	Like/Unlike
a. $2x, \frac{3}{7}x, -5x$	_____
b. $2x, 2x^2, 2x^3$	_____
c. $\frac{1}{4}xyz, -2xyz, 3xy$	_____

Q6. Fill in the blanks:

a. The coefficient of x in $5x^2y^3$ is _____.

b. The numerical coefficient of $7xyz$ is _____.

c. The literal factor of $-5pq^2r$ is _____.

d. The numerical coefficient of a^2bc is _____.

Q7. Find the degree of the following polynomials.

Polynomial	Degree
a. $2x^2y + 5xy - 3$	_____
b. $8y^2 - 1$	_____
c. $6p^4 - 7q^3$	_____

Q8. Ram took x hours to finish his homework. How many minutes did Ram take to complete his homework?

Answer: _____

Q9. A car travelled x km in y hours while a train covers p km in q hours. Find the difference in their speeds. (Speed of train > speed of car)

Answer: _____

Q10. Kiran's age is twice her father's age. Her brother Aman is 10 years younger than Kiran. Find Kiran's and Aman's age if their father's age is x years.

Answer:

Kiran's age: _____

Aman's age: _____

ANSWERS

1.

10 times x decreased by 7	$10x - 7$
Number preceding x	$x - 1$
m taken away from twice of a	$2a - m$
Square of x added to 7	$x^2 + 7$

2. $y = x - 2000$

3.

Expression	No. of terms	Type of expression
a. $2x^2y$	1	Monomial
b. $7xy - 2ab$	2	Binomial
c. $3a + 4b - 6abc$	3	Trinomial
d. $3xyz$	1	Monomial

4. (b) and (d)

5. a. Like, b. Unlike, c. Unlike

6. a. $5xy^3$, b. 7, c. pq^2r, d. 1

7.

Polynomial	Degree
a. $2x^2y + 5xy - 3$	3
b. $8y^2 - 1$	2
c. $6p^4 - 7q^3$	4

8. 60x

9. $\dfrac{p}{q} - \dfrac{x}{y}$

10. Kiran's age: 2x; Aman's age: $2x - 10$

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