INDIAN SCHOOL NIZWA - WORKSHEET

MATHEMATICS
CH 4: Expressions Using Letter- Numbers

Name:	Date:	Class: VII Sec:

	Multiple Choice Questions
1.	One plate of dosa costs ₹50 and one plate of idli cost ₹30. If $\boldsymbol{x}$ plates of dosa and $\boldsymbol{y}$ plates of idli are ordered, which expression represents the total amount earned in rupees? a) $50x - 30y$ $b)\ 50x + 30y$ $c)\ (50 + 30)\ \times (x + y)$ $d)\ 30x\ + 50y$
2.	A flour mill takes 12 seconds to start and 6 seconds per kg of grains to grind. Which expression describes the time to grind z kg of grains, starting from off? a) $12 + 6 + z$ $b)\ 12\ \times\ 6\ \times\ z$ $c)\ 12 + 6 \times z$ d) $(12 + 6)\ \times z$
3.	For a matchstick pattern, the number of matchsticks in step y is given by $4y + 1$.How many matchsticks are needed for step 5? a) 22 b) 21 c)18 d) 28
4.	A shop rents out chairs and tables. The net cost for x chairs and y tables is ₹ $25\ x\ + 60\ y$. What is the cost for 3 chairs and 2 tables? a) ₹195 b) ₹206 c) ₹155 d) ₹135
5.	In a quiz, Meera's score in one round is $5p - 2q$, where p is the points for a correct answer and q is the penalty. If $p = 6$ and $q = 1$, what is her score? a) 29 b) 24 c) 28 d) 32
6.	Geeta earns ₹ x per month and saves ₹ y per month. Her monthly expenditure (in ₹) is $(a)\ x\ +\ y$ $(b)\ x\ \div\ y$ $(c)\ x\ \times\ y$ $(d)\ x\ -\ y$
7.	Jayant drives x km in one hour. How much distance does he cover in 3 hours 40 minutes? $(a)\ 3x\ +\ \frac{2}{3}$ $(b)\ \frac{2}{3}x\ +\ 3$ $(c)\ \frac{11}{3}x$ $(d)\ \frac{11}{3}\ +\ x$
8.	If Mukesh has 2 notes of ₹100, 5 notes of ₹20 and 6 notes of ₹5, then the correct expression representing his amount is (a) 2 × 100 + 20 × 6 + 5 × 5 (b) 20 × 2 + 100 × 6 + 5 × 5 (c) 100 × 2 + 5 × 20 + 6 × 5 (d) 5 × 100 + 20 × 5 + 6 × 5
9.	The value of $p\ +\ p\ +\ q\ +\ q\ -\ p\ -\ q$ is equal to

	$(a)\ 2p\ +\ 2q$ $(b)\ p\ +\ q$ $(c)\ 2p$ $(d)\ 2q$
10.	p is subtracted from the sum of s and 9 is written as a) $(s+9)-p$ $b)\ p-\ (s+9)$ $c)\ p-(s-9)$ $d)\ p+(s+9)$
11.	**Match the following** **A** **B** (i) $(w\ +\ 2)\ +\ 7\ \times\ 4$ $(a)\ 4w\ +\ 36$ $(ii)\ ((w\ +\ 2)\ +\ 7)\ \times\ 4$ $(b)\ -13$ $(iii)\ (30x\ -\ 20y)\ +\ (30\ +\ 20)\ \times\ x\ +\ y$ $(c)\ 21x\ +\ 3y$ $(iv)\ 15x\ +\ 8x\ -\ 2x\ +\ 3y$ $(d)\ w\ +\ 30$ $(v)\ The\ value\ of\ 3\ x\ +\ 2\ y\ is, if\ x\ =\ -3, y\ =\ -2$ $(e)\ 80x\ -\ 19y$
12.	Express the following word statements algebraically: (i) 10 more than the number x (ii) 5 less than twice the number y (iii) 4 more than the sum of x and y (iv) 2 less than the product of $3a$ by 7.
13.	The mass of Book A is 760 g and the mass of Book B is 550 g. Find the total mass of: (i) 3 copies of Book A and 5 copies of Book B. (ii) m copies of Book A and n copies of Book B.
14.	The time taken by an aeroplane to travel from City A to City B is 10 minutes more than one-eighth of the time taken by a train. Find the time taken by the aeroplane if the time taken by the train is (i) 12 hours (ii) t hours.
15.	Some simplifications are shown below where the letter-numbers are replaced by numbers and the value of the expression is obtained. Observe each of them and identify the wrong ones. For each wrong ones, find the correct value of the expression. (i) If p = 10, then $5p\ -\ 2\ =\ 13$ (ii) If x = 3 and y = 1, then $x\ +\ 2y\ =\ 5$ (iii) If p = 10 and q = 5, then $5pq\ +\ 1\ =\ 21$
16.	**Simplify the following:** $(i)\ x\ +\ y\ +\ x\ -\ y$ $(ii)\ x\ +\ y\ -\ x\ +\ y$ $(iii)\ x\ +\ y\ -\ (x\ +\ y)$ $(iv)\ 3p\ -\ p\ -\ p\ -\ p$ $(v)\ 3p\ -\ p\ -\ (p\ -\ 2p)$

	$(vi)\ 3p - q - p - q$ (vii) $3p - (p + p) - 3p$ $(viii)\ p + 4 + 6p - 3p - 2$ $(ix) - 1m - 2n - 6n - 4m$ $(x)\ 3x - 2y + z - x + 6y - 6z$ $(xi)\ (5x + 8y) - (3x - y)$ $(xii)\ (5x + 8y) + (3x - y)$ $(xiii)\ (x + 3y) - (2x + 4y) + (5x - y)$
17.	Add the expressions: a) $8a - 14b + 5 \quad and\ 5b - (a - 9)$ b) $13x - 7 - 3y \quad and\ 3x - 2y + 7$
18.	Subtract the expressions: a) $10x + 2 - 5y\ from\ -5x + 8 + 5y$ b) $9m + 31 - 6n\ from\ 6m + 3 - 5n$
	Assertion – Reason: In questions 19 and 20, A statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option.
19.	**Assertion (A):** The perimeter of an equilateral triangle, if the side length of the triangle m is $4m$. **Reason (R)**: In an equilateral triangle, each side length is equal. (a) Both assertion and reason are true and the reason is the correct explanation of assertion. (b) Both assertion and reason are true but the reason is not the correct explanation of the assertion. (c) Assertion is true and the reason is false. (d) Assertion is false and the reason is true.
20.	**Assertion (A):** The expression $5(a + 2)$ simplifies to $5\ a\ +\ 2$. **Reason (R):** Distributive property means multiplying the number with terms inside the bracket. Which of the following is true? (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion. (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion. (c) Assertion is true but Reason is false. (d) Assertion is false but Reason is true.
21.	**Case-Based Question** A teacher asked two students, Aarav and Neha to list the materials needed for a craft project.

	Aarav wrote: $3x + 2y$, where x represents coloured paper sheets and y represents glue sticks. Neha wrote: $5x - y$, with the same meanings for x and y. Based on the above information, answer the following questions: (a) The teacher decides to combine the two lists. What is the combined list of materials in algebraic expression form? (b) If Neha decides to remove her list from the total, what will the expression be? (c) If 1 sheet of coloured paper costs ₹2 and 1 glue stick costs ₹5, what is the cost of the combined materials list?

REVISION

I. **Simplify:**
   a) $10 + 6 \div 2 - 3 \times 1$
   b) $18 \div 2 - 5 + 40$
   c) $18 \times 3 - 4 + (17 - 10) \div 7$

II. **Find quick ways to calculate these products.**
   a) $2 \times 4567 \times 50$
   b) 864×25
   c) 240×125

III. **Solve using suitable properties**
   a) 340×97
   b) 542×1001