MATHS

BOOKS - RD SHARMA MATHS (ENGLISH)

INTRODUCTION TO ALGEBRA

Others

1. Write each of the following phrases using

numbers, literals and the basic operation of

subtraction: (i) 5 less than a literal x. (ii) Decreases x by 7. (iii) Subtract 4 from x. (iv) x less than the sum of $y \ and \ 7$ (v) Decrease the sum of $x \ and \ y$ by z (vi)a is diminished by 2 (vii) a less than 4.

2. Write each of the following phrases by using numbers, literals and signs of basic operations: (i) Quotient of z by 6 is multiplied by y. (ii) Quotient of $x \ by \ y$ added to the

product of x and y (iii)3 taken away from the quotient of x by $2y$. (iv) Eight times a number p is x less than a number y.

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3. Anjali scores 100 marks in Mathematics and x marks in Science. what is her total score in Science and Mathematics?

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4. The score of Ishita in Mathematics is 25 more than the two third of her score in Science. If she scored x marks in Science, determine her score in Mathematics.

A. $\dfrac{2}{3}x + 25$

B. $\dfrac{3}{2}x + 25$

C. $\dfrac{2}{3x} + 25$

D. $\dfrac{2}{3}x - 25$

Answer: A

5. John covers x centimetres in one step. How many centimetres does he cover in 9 steps?

6. Rohan spends Rs. x daily and saves Rs. y per week. What is his income after 3 weeks?

    A. $21x + 3y$

    B. $21 - 3y$

C. $21x \times 3y$

D. $7x + 3y$

Answer: A

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7. Ahmed starts from Delhi at 8 AM to Jaipur. If his car is running at the speed of $x \ km/hr$ and at 1PM he observes that he is 20km away from Jaipur. Find the distance between Delhi and Jaipur.

8. Write the following using numbers, literals and signs of basic operations State what each letter represents: The diameter of a circle is twice its radius. The area of a rectangle is the product of its length and breadth. The selling price equals the sum of the cost price and the profit. The total amount equals the sum of the principal and the interest. The perimeter of a rectangle is two times the sum of its length

and breadth. The perimeter of a square is four times its side.

9. Write the following using numbers, literals and signs of basic operations: The sum of 6 and x. 3 more than a number y. One-third of a number x. One-half of the sum of number x and y Number y less than a number 7. 7 taken away from x 2 less than the quotient of

x by y. 4 times x taken away from one-third of y Quotient of x by 3 is multiplied by y.

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10. Think of a number. Multiply it by 5. Add 6 to the result. Subtract y from this result. What is the result?

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11. The number of rooms on the ground floor of a building is 12 less than the twice of the number of rooms on first floor. If the first floor has x rooms, how many rooms does the ground floor has?

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12. Binny spends Rs. a daily and saved Rs. b per week. What is her income for two weeks?

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13. Rahul scores 80 marks in English and x marks in Hindi. What is his total score in the two subjects?

14. Rohit covers x centimetres in one step. How much distance does he cover in y steps?

15. One apple weighs 75 grams and one orange weighs 40 grams. Determine the weight of x apples and y oranges.

16. One pencil costs Rs. 2 and one fountain pen costs Rs. 15. What is the cost of x pencils and y fountain pens?

17. Write each of the following in exponential form: (i) $a\,x\,a\,x\,a\,x\,a\,x\,a\,x\,a\,x\,a$ (ii) $a\,x\,a\,x\,a\,x\,a. .10\ times$ (iii) $17\,x\,x\,x\,x\,x\,x\,y\,x\,y\,x\,y$ (iv) $y\,x\,y\,x\,y\,x\,y\,x\,y. .20\ times$ (v) $7\,x\,a\,x\,a\,x\,b\,x\,b\,x\,b\,x\,c$ (vi) $13\,x\,p\,x\,p\,x\,p\,x.7\ times\ x\,q\,x\,q\,x\,q.12\ times$

18. Write each of the following in product form: (i) 4a^3 (ii) x^8 (iii) 7p^2q^3 (iv) 9a b^3 (v) 10 x^3y^3z^3`

19. Write each of the following in exponential form: (i) $a^2b^3x \ a^3b$ (ii) $3a^2b^3 \ x \ 2ab^4$ (iii) $4x^2y^3 \ x \ 3xy^2 \ x \ 5x^2y$

20. The population of a certain species of insects is x now. It becomes y times itself after one week. What will be its population after 2 weeks?

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21. Rohit covers $7x$ certimetres in one step. What is the distance moved by him in $5x$ steps?

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22. Melin has $14a$ picture cards. if each picture card costs Rs. $3ab$, determine the cost of picture cards possessed by Melin.

23. In a class-room there are $2x$ rows of benches. If each row has $3xy$ benches and each bench can accommodate x students, determine the number of students in the room if it is full up to its capacity.

24. The volume of a cuboid is given by the product of its length, breadth and height. The length of a cuboid is 3 times its breadth and the height is one-half of the length. Find its volume if breadth is $b\ cm$.

25. Write each of the following in the product form: (i) $a^2 b^5$ (ii) $8x^3$ (iii) $7a^3 b^4$

26. Write each of the following in the product form: (i)$15\,a^9b^8c^6$ (ii) $30x^4y^4z^5$ (iii) $43p^{10}q^5r^{15}$ (iv)$17\,p^{12}q^{20}$

27. Write down each of the following in exponential form: (i)$4a^3$ x $6ab^2$ x c^2 (ii) $5xy$ x $3x^2y$ x $7y^2$ (iii)a^3x $3ab^2x$ $2a^2b^2$

28. The number of bacteria in a culture is x now. It becomes square of itself after one week. What will be its number after two weeks?

29. The area of a rectangle is given by the product of its length and breadth. the length

of a rectangle is two-third of its breadth. Find its area if its breadth is $x \ cm.$

30. If there are x rows of chairs and each row contains x^2 chairs. Determine the total number of chairs.

31. 5 more than twice a number x is written as

(a) $5 + x + 2$ (b) $2x + 5$ $2x - 5$ (d) $5x + 2$

32. The quotient of x by 2 added to 5 is written as (a) $\dfrac{x}{2} + 5$ (b) $\dfrac{2}{x} + 5$ (c) $\dfrac{x + 2}{5}$ (d) $\dfrac{x}{2 + 5}$

33. The quotient of x by 3 is multiplied by y is written as (a) $\dfrac{x}{3y}$ (b) $\dfrac{3x}{y}$ (c) $\dfrac{3y}{x}$ (d) $\dfrac{xy}{3}$

34. 9 taken away from the sum of $x \: and \: y$ is (a) $x + y - 9$ (b) $9 - (x + y)$ (c) $\dfrac{x + y}{9}$ (d) $\dfrac{9}{x + y}$

35. The quotient of $x\ by\ y$ added to the product of $x\ and\ y$ is written as (a) $\dfrac{x}{y} + xy$ (b) $\dfrac{y}{x} + xy$ (c) $\dfrac{xy + x}{y}$ (d) $\dfrac{xy + y}{x}$

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36. $a^2b^3 \times 2ab^2$ is equal to: (a) $2a^3b^4$ (b) $2a^3b^5$ (c) $2ab$ (d) a^3b^5

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37. $4a^2b^3 \times 3ab^2 \times 5a^3b$ is equal to:

(a) $60a^3b^5$ (b) $60a^6b^5$

(c) $60a^6b^6$

(d) a^6b^5

38. If $2x^2y \ and \ 3xy^2$ denote the length and breadth of a rectangle, then its area is (a) $6xy$ (b) $6x^2y^2$ (c) $6x^3y^3$ (d) x^3y^3

39. In a room there are x^2 rows of chairs and each row contains $2x^2$ chairs. The total number of chairs in the room is (a) $2x^3$ (b) $2x^4$ (c) x^4 (d) $\dfrac{x^4}{2}$

40. $a^3 x 2a^2 bx 3ab^5$ is equal to:

(a)$a^6 b^6$

(b) $23a^6 b^6$

(c) $6a^6b^6$

(d) None of these

41. 9 less than a literal x is written as (a) $9 - x$

(b) $x - 9$ (c) $x + 9$ (d) None of these

42. The product of $x \ and \ y$ is decreased by 4 is

written as

(a) $4 - xy$

(b) $x\left(y - 4\right)$

(c) $xy - 4$

(d) $xy + 4$

43. The initial count of bacteria is x and it becomes y times every day. The total count of backteria after one week is (a) $7\,xy$ (b) $x + 7y$ (c) xy^7 (d) xy^6

44. The product of a and b is added to their sum is written as

(a) $ab + a + b$

(b) $a + b - ab$

(c) $a + ab$

(d) $a + ab - b$

45. x^2 x $2y^3$ x $5x^3y^2$ is equal to:

(a) $10x^2y^5$

(b) $10x^5y^2$

(c) $10x^5y^5$

(d) x^5y^5

46. If the lengths of edges of a cuboid are $2x,\ 3y\ and\ 4\ xy,$ then its volume is: (a) $24\ xy$ (b) $9x^2y$ (c) $24\ x^2y^2$ (d) $6x^2y^2$

47. The sum of a and b is multiplied by taking away 5 from their sum. The expression representing the statement is: (a) $(a + b)(a + b - 5)$ (b) $(a + b)(5 - a - b)$ (c) $(a + b)(5 - a + b)$ (d) $(a + b)(5 + a - b)$

48. The length of a rectangle is y times its breadth x. The area of the rectangle is: (a) xy (b) xy^2 (c) x^2y (d) None of these

49. $2x^2 X \ 3xy^2 X \ 4x^3y^5$ is equal to: (a) $24x^6y^6$

(b) $24x^6y^7$ $24x^7y^6$ (d) $24x^7y^7$

50. Thrice x added to y squared is written as:

(a)$3xy^2$

(b) $x^2 + y$

(c) $x + y^2$

(d) $3x + y^2$

51. Write down $7xy^2 X 3x^2y X 5y^4$ in the exponential form.

52. The length and breadth of a room are $3x^2y^3 and 6x^3y^2$ respectively. Find its perimeter and area.

53. Write down the following in the product form: $x^3 y^4$ (ii) $6x^7 y$ (iii) $9xy^2 z^2$ (iv) $10a^3 b^3 c^3$

54. The volume of a cuboid is given by the product of its length, breadth and height. The length of a cuboid is $2x^2$ times its breadth and the height is $\dfrac{3}{2} xy$ times of length. Find the volume of the cuboid if its breadth is $6y^2$

55. Write

$3\,x\,a\,x\,a\,x\,2\,x\,b\,x\,b\,x\,b\,x\,c\,x\,c\,x\,c\,x\,c$ in the

exponential form.

56. In a large hall there are $4x^2$ rows of

benches. If each row has $5x^2y^3$ benches and

each bench can accommodate xy^2 person,

determine the total number of persons if its is full up to its capacity.

57. The cost of painting a rectangular metal sheet is square of its area. If the length and breadth of the rectangle are $2xy \; and \; 3x^2y$, find the cost. Given that area of a rectangle is the product of its length and breadth.

58. Ravish covers $3x^2y$ centimetres in one step. What is the distance moved by him in $2xy^2$ minutes, if he takes xy steps in one minute.

59. Aarushi spends $Rs\, x$ daily and saves $Rs\, y$ per week. How much money she saves in xy^2 weeks?

60. One ball pen costs $Rs\dot{x}$ and one fountain pen costs $Rs\dot{y}$. Find the cost of y^2 ball pens and x^2 fountain pens.

61. $x + x + x + \ldots\ldots (y\ times) =$

62. A chair costs $Rs\dot{x}$. The cost of $x^2 y$ chairs is

....

63. a x a x 3 x b x b x 2 x c x c= ....

64. A man spends $Rs\dot{x}$ per week. The total money spent by him in xy^2 weeks is ....

65. $x^3 \times 4xy^2 \times \dfrac{3}{2}xy^3 = $ ....