Simple Simultaneous Equations in Two Variables Exercise-12.1 Mathematics (Class – 10), Girls

Creative Multiplication Choice Questions

1. Which one of the following is correct for the system of equations 6x - 8y =10 and 12x - 16y = 18? [Ctg.B.- 19] a) The system of equations is consistent and independent b) The system of equations has only one (unique) solution c) The system of equations is consistent and dependent d) The system of equations is inconsistent and independent 2. Comparing the equation 3x - 7y - 4 =0 and ax + by + c = 0 then what is the value of c? [S.B.- 19] a) 3 b) - 7 c) -4 d) 4 3. x + 2y = 10 and 2x + 4y = 18, the system of equations are – [B.B.- 19] a) Consistent b) Solution has infinite numbers c) Solutions has only one d) Independent 4. The equations 2x - y = 13 and 5x + 6y= 7 -----[Dj.B.- 19] i. Are consistent ii. Have only one solution iii. Are mutually dependent Which one of the following is correct? a) i and ii b) i and iii c) ii and iii d) i, ii and iii 5. $a_1x + b_1y = c_1$ and $a_2x + b_2y = c_2$ equations. are two Impose condition to make them dependent— [J.B.- 16, Dj.B.- 16] a) $\frac{a_1}{a_2} \neq \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$ b) $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$ c) $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$ d) $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$

6. Which one of the following system of equations are consistent, independent to each other and have unique solution? [B.B.- 16]

a)
$$x - \frac{1}{2}y = 5$$

 $- 2x + y = -10$
b) $\frac{1}{2}x - y = 2$
 $x - 2y = 4$
c) $x - \frac{1}{2}y = 5$
 $2x + y = -10$
d) $x - 2y = 6$
 $\frac{1}{2}x - y = 6$

7. In which condition, $a_1x + b_1y = c_1$ and $a_2x + b_2y = c_2$ system of conditions are consistent and mutually independent? [C.B.- 15]

a)
$$\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$$

b) $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$
c) $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$
d) $\frac{a_1}{a_2} = \frac{b_1}{b_2}$

$$6x - 10y = 15$$

Solve of the system of the equation—
[S.B.- 15]
e) Numerous f) Unique

<i>e)</i>	Numero	us	1)	omque
g)	Two		h)	No solve
	-		-	

9. If $a_1x + b_1y + c_1 = 0$ $a_2x + b_2y + c_2 = 0$ Which one is the solution of the system?

a)
$$\frac{b_2c_1 - b_2c_1}{a_1b_2 - a_2b_1}$$

b) $\frac{b_1c_2 - b_1c_2}{a_1b_2 - a_2b_1}$
c) $\frac{b_1c_2 - b_2c_1}{a_1b_2 - a_1b_1}$
d) $\frac{b_1c_2 - b_2c_1}{a_1b_2 - a_2b_1}$

10. 3x - 5y = 7, 6x - 10y = 15 In these pair of equations- [All B.- 18]

- i. Inconsistent
- ii. Have only one solution
- iii. Mutually independent

Which one of the following is correct?

- a) i and ii b) i and iii
- c) ii and iii d) i, ii and iii

11. x + 3y = 1

8.

5x + 15y = 5

The pair of equations are -[D.B.- 17]

- i. Consistent
- ii. Mutually dependent
- iii. Have only one solution

Which one of the following is correct? b) i and iii a) i and ii c) ii and iii d) i, ii and iii 5x + 3y = 412. 2x + 7y = 9The pair of equations are [S.B.-17] i. Consistent ii. Have many solutions iii. Mutually independent Which one of the following is correct? a) i and ii b) i and iii c) ii and iii d) i. ii and iii 13. 3x + y = 18 $\mathbf{x} - \mathbf{y} = 2$ The system of equations are- [J.B.- 17] i. Consistent ii. Mutually dependent iii. It has only one solution Which one of the following is correct? a) i and ii b) i and iii c) ii and iii d) i, ii and iii The system of equations, x + 3y = 114. and 2x + 6y = 2 are— [B.B.- I7] i. Dependent ii. Consistent iii. Has many solution Which one of the following is correct? a) i and ii b) i and iii c) ii and iii d) i, ii and iii 15. 5x + 2y = 7 and 10x + 4y = 14 are two system of equations. [Ch.B.- 16] i. Equations are consistent ii. The system of equations has only one solution iii. Mutually dependent Which one of the following is correct? a) i and ii b) i and iii c) ii and iii d) i, ii and iii $-\frac{1}{3}x-y=\theta \text{ and } x-3y=0$ 16. the system of equation is— [R.B.- 15] i. Consistent ii. Independent iii. No solve Which one of the following is correct? b) i and iii a) i and ii c) ii and iii d) i, ii and iii

17. The system of equations 2x + y = 12and x - y = 3 are — [Ch.B.- 15] i. Consistent ii. Independent iii. Dependent Which one of the following is correct? a) i and ii b) i and iii c) ii and iii d) i, ii and iii A pair of linear equations have one or 18. more solutions if the equations are i. Consistent and Independent ii. Consistent and Dependent iii. Inconsistent and Independent Identify the correct option on the basis of the above information. a) i and ii b) i and iii c) ii and iii d) i, ii and iii 19. $a_1x + b_1y = c_1$ and $a_2x + b_2y = c_2$ are two simultaneous equations and $\frac{\mathbf{a}_1}{\mathbf{a}_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}.$ i. Inconsistent ii. Mutually dependent iii. Infinite numbers solution Which one of the following is correct? a) I b) Ii c) iii d) i, ii and iii 20. A pair of linear equations have one or more solutions if the equations are i. Consistent and independent ii. Consistent and dependent iii. Inconsistent and independent Identify the correct option on the basis of the above information. a) i and ii b) i and iii c) ii and iii d) i, ii and iii 21. x - 2y + 5 = 0 and 2x - 4y + 10 = 0 the system of equations — i. Consistent ii. Inconsistent iii. Infinitely many solutions Which one is correct? a) i and ii b) ii and iii c) i and iii d) i, ii and iii x + 3y = 1 and 2x + 6y = 2 are two 22. equations-

i. Consistent

ii. Independent a) One iii. One solution c) Three Which one is correct? 30. How many solutions of the equations are 3x - 5y = 7 and 6x - 10y = 15? a) i and ii b) i c) ii and iii d) i, ii and iii a) No Solution b) One Solution $a_1x + b_1y = c_1$ and $a_2x + b_2y = c_2$ c) Two Solutions are a system of equations. d) Infinite number of Solutions 31. Which of the following is the solution Answer to the question No. 23 and 24: of the system of equations ax = 0 and 23. Which is the condition for consistent $a^2x + b^2y = b^3$? independent and unique solution? a) (a^2, b^2) a) $\frac{a_1}{a_2} \neq \frac{b}{b_2}$ b) $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$ c) $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$ d) $\frac{a_1}{a_2} \neq \frac{c_1}{c_2}$ c) $(0, b^3)$ 32. What is the power of two expressions in the simple system of equations? 24. What is the condition for inconsistent, a) One no solution of the system of equation? c) Three a) $\frac{a_1}{a_2} \neq \frac{b}{b_2}$ b) $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$ c) $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$ d) $\frac{a_1}{a_2} \neq \frac{c_1}{c_2}$ Two equations x + 2y = 6 and x - y = 033. i. Are said to system of equations together. Ans: c ii. Have a common solution Using the system of equation answer iii. Have infinite common solutions the questions (25 - 26): Which of the following is correct? 25. The system of equation a) i and ii i. Has same ratio of coefficient c) ii and iii ii. Is inconsistent 34. The solution of equation 2x + y = 12iii. Defines parallel lines is-Which one is correct? i. (-2, 16) a) i and ii b) i and iii ii. (0, 12) d) i, ii and iii c) ii and iii iii. (6, 0)26. -----Which one is correct? a) The equations have no solution a) i and ii b) The equations are consistent c) ii and iii c) The equations consist many 35. The point (3, 0) is —solutions i. The solution of equation x - y = 3. equations d) The have unique ii. The solution of equation 2x + y =solution How many solutions are there in the 27. 12. equations 3x + 2y = 2 and 6x + 4y = 4? iii. The solution of equation 4x + y =a) One b) Two 12. d) Four c) Infinite Which of the following is correct? 28. How many simple equations are there a) i and ii in the system of simple equations with c) ii and iii two variables? The equation 2x + y = 12 and x - y = 336. a) One b) Two ared) None c) Infinite i. Consistent 29. How many solutions are there in the ii. Independent equation x + 3y = 6? iii. Dependent

b) Two

d) Infinite

b) (a^3, b^3)

d) (0,b)

b) Two

d) Four

b) i and iii

b) i and iii

b) i and iii

d) i, ii and iii

d) i, ii and iii

d) i, ii and iii

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Which one of the following is correct? a) i and ii b) ii and iii c) i and iii d) i, ii and iii Answer to the questions (37 - 39) using the following information : System of equations : 2x + y = 12(i) x - y = 3(ii) 37. Which of the following two points satisfy the equation (i)? a) (0, 12) and (5, 2) b) (5, 2) and (0, 0)c) (3, 2) and (2, 1)d) (1, 1) and (2, 2) 38. Which of the following point satisfy the equation (ii)? a) (5,2) b) (6,2) c) (7,3) d) (8,3) 39. What is the solution of the given system of equations? a) (7,3) b) (6,2) c) (5,2) d) (5,1) **40**. For what value of c_1 and c_2 the system of the equations x + y = $c_2 and 2x + 2y = c_1$ will be inconsistent? a) $c_1 = c_2 = 0$ b) $c_1 = c_2 \neq 1$ c) $c_1 = c_2 = 2$ d) $c_1 \neq c_2$ 41. What type of solution of the system of equations is? a) Unique solution b) No solution c) Infinite number of solutions d) x and y each have two solutions 42. Which of the following is correct for the system of equations 3x - 4y = 10and 6x + 5y = 46? a) Has unique solution b) No solution c) Has infinite solutions d) Inconsistent 43. What is the type of the system of equations? a) Consistent b) Inconsistent c) Dependent d) consistent and independent

44. Which one of the following is not a simple equation? a) 9x - 15 = 17b) 5x - 15y = 25c) $2x^2 + 5 = 7$ d) x - 1 = 11x45. Which of the following is correct for the system of equations 3x - 4y = 10and 6x - 8y = 18? a) It is consistent b) It has unique solution c) It has infinite solution d) It is inconsistent 46. Which of the following equation is dependent on the equation 2x + 4y =8? a) x + 2y = 4b) 3x + 2y = 4c) x + 3y = 6d) x + y = 447. For which one of the following the system of equations $\begin{cases} 2x + y = c_1 \\ 4x + 2y = c_2 \end{cases}$ will be consistent? b) $c_1 = 0$ a) $c_1 \neq c_2$ d) $c_1 = c_2 = 0$ c) $c_2 = 0$ For what value of c_1 and c_2 the 48. system of equations $\begin{cases} 4x + 3y = c_1 \\ 8x - 6y = c_2 \end{cases}$ will be consistent? a) $c_1 = c_2 = 0$ b) $c_1 \neq c_2$ c) $c_1 = c_2 = 2$ d) $c_1 = c_2 = 1$ 49. For which of the following conditions are the system of equations ax + by +c = 0 and px + qy + r = 0 consistent and mutually independent? b) $\frac{a}{p} = \frac{b}{q} = \frac{c}{r}$ a) $\frac{a}{p} \neq \frac{b}{q}$ c) $\frac{a}{p} = \frac{b}{q} \neq \frac{c}{r}$ d) $\frac{a}{p} = \frac{b}{p}$ 50. How many solutions are there in the system of equations 3x - 5y = 76x - 10y = 15? a) One b) Two c) Three d) None When the system of equations are 51. inconsistent, mutually independent

and have no solution? a) $\frac{4}{a} = \frac{-5}{b}$ b) $\frac{4}{a} \neq \frac{-5}{b}$

c) $\frac{4}{a} = \frac{-5}{b} = \frac{-6}{c}$ d) $\frac{4}{a} = \frac{-5}{b} \neq \frac{-6}{c}$ What is the value of $\frac{a_1}{a_2}$ in case of the 52. system of equation $-\frac{1}{2}x + y = -1$ and x + y = 5?b) $-\frac{1}{2}$ a) -2 c) $\frac{1}{2}$ d) 2 Ratio of the co-efficients of variables 53. x, y and constant terms in any system of equations are $\frac{4}{8} = \frac{-2}{-4} = \frac{6}{12}$ the system of equations i. Is consistent ii. Is dependent iii. With unique solution Which one of the following is correct? b) i and iii a) i and ii c) ii and iii d) i, ii and iii $-\frac{1}{3}x-y=0 and x-3y=0$ 54. are two equations they are -i. Consistent ii. Independent iii. No solution Which one of the following is correct? b) ii and iii a) i and ii c) i and iii d) i, ii and iii The system of equations 2x - y = 64x - 2y = 12 ----55. i. Is mutually dependent ii. Is inconsistent. iii. Has infinite number of solutions. Which one of the following is correct? a) i and ii b) i and iii d) i. ii and iii c) ii and iii 56. **Observe the following equations :-**i. 3x + 4 = 12ii. $\frac{x}{3} - 2 = -1$ iii. 3x + 1 = 10Which one of the following is correct? b) ii and iii a) i and ii d) i, ii and iii c) i and iii Comparing the equation $4x^2 - 5x -$ 6 = 0 with $ax^2 + bx + c = 0$. Answer the question (57 - 58): What is the value of b? 57.

b) 5 a) 4

58.

59.

60.

c) 6 d) -5 When the system of equations are consistent, mutually independent and have unique solution? a) $\frac{4}{a} = \frac{-5}{b}$ b) $\frac{4}{a} \neq \frac{-5}{b}$ c) $\frac{4}{a} = \frac{-5}{b} = \frac{-6}{c}$ d) $\frac{4}{a} = \frac{-5}{b} \neq \frac{-6}{c}$ Answer to the questions (59 and 60) using the following information : x + 3y = 12x + 6y = 2What is the ratio of the constant the given terms in system of equations? b) $\frac{2}{3}$ a) d) $\frac{1}{6}$ c) How many solutions are there in the system of equations? a) Unique b) Infinite d) Two c) No solution **Creative Ouestions:**

- x 2y + 1 = 0 and 2x + y 3 = 0 is a 1. system of equations.
 - a) Comparing the given system of equations with the system of equations $\begin{array}{c} a_1x + b_1y + c_1 = 0\\ a_2x + b_2y + c_2 = 0 \end{array}$, find the value of a_1, a_2, b_1 and b_2 .
 - b) Justify whether the system of equations consistent is or inconsistent. Justifying the mutual dependence find the number of solutions of the system of equations.
 - c) Solve the system of equations.

Exercise-12.2

Creative Multiplication Choice Questions

1. If 6x - y = 5 and 5x - 2y = 2, then x + 3x - 2y = 2 $\mathbf{v} = \mathbf{what}$? [R.B.- 19] b) 3 a) 2 c) 4 d) 5 2. If 4x - 3y = 10 and x - y = 1, what is the value of x? [C.B.- 19] b) 7 a) 6

	c) 12	d) 13
3.	If $2x - y =$	8 and $x - 2y =$
	A then $\mathbf{x} \perp \mathbf{y} = \mathbf{y}$	What? [P B _ 17]
	\mathbf{H} , then $\mathbf{X} + \mathbf{y} =$	
	a) 0	b) 4
	c) 8	d) 12
4.	If $x + y = 6$ and	x - y = 4, which
	one of the following	a is the value of (v
	y):	[Ctg.B 17]
	a) (6, 4)	b) (4,6)
	c) (5, 1)	d) (1,5)
5.	If $x + y = 7$ and	d $x - y = 5$, then
	which one of the fo	llowing is the value
	$\mathbf{OI}(\mathbf{X},\mathbf{Y}):$	[U.B 10]
	a) (2,6)	b) (6,2)
	c) (6, 1)	d) (1,6)
6.	2x - y = 16 and	x - y = 4 are
	expressed as a sy	stem of equations.
	What is the value of	f_v ? [SB-16]
		1 y · [D.D 10]
	a) - 24	0) -8
	c) 8	d) 24
7.	If $x + y = 8$ an	d $2y = 10$ then
	what is the value of	x? [D.B 15]
	a) – 2	b) 2
	c) 3	d) 13
0	te x y 1	
ð.	$\Pi = \frac{1}{-14} = \frac{1}{-28} = \frac{1}{-12}$	$\frac{1}{14}$ then $(x, y) =$
	What?	[J.B 15]
	a) (1,2)	b) (2,1)
	c) $(-1, -2)$	d) $(-2, -1)$
0	$2v \pm v = 5$ (i)	a) (_) _)
).	2x + y = 3(1) 2 - 2 - 2 - 11	(••)
	3x - 2y = 11	
	Find out the value of	of (x, y) . [B.B 15]
	a) $(3, -1)$	b) (3,1)
	c) (2, 1)	d) (5,2)
10.	ax + by = ab an	d ax - by = ab.
	Which one is corre	ct solution?
	which one is correct	
	(a, b)	[D], D, - IS
	a) (a, b)	D) (D, a)
	c) (b,0)	d) (0,b)
11.	x - 2y = 8 and 3x	- $2y = 4$. What is
	the value of x?	[Ch.B 15]
	a) – 5	b) - 2
	c) 2	d) 5
10		$u_{f} = 10 \text{ th set } -1 \text{ th } 10 th$
12.	$\mathbf{II} \mathbf{x} + \mathbf{y} = 8 \text{ and } 2\mathbf{y}$	y = 10 then what is
	the value of x?	
	the value of x.	
	a) -2	b) 2

13.	Which one is the	solution of the
	system of equations	$\frac{x}{a} + \frac{y}{b} = 2$ and
	$ax + by = a^2 + b^2?$	
	a) (a, b) b) (b,a)
	c) (a, 0) d	l) (0, b)
	Observe the follow	ing term then
	answer following (12 -	14) question :
	4x - y - 7 = 0	
	3x + y = 0	
14.	What is the value of x	?
	a) 1 b) -1
	c) 2 c	$\frac{1}{2}$
15.	What is the value of v	2
	a) 3 b	o) -3
	c) 4 d	l) -4
16.	How many solution is	there of the pair
	of equations?	-
	a) 1 b) Many
	c) 2 c	l) 3
17.	If $5x - 3y = 8$ and $3x$	x - 4y = 4, then
	what is the value of 2	$\mathbf{x} + \mathbf{y}$?
	a) 0 b	o) 4
	c) 8 c	l) 12
18.	If $3x + 2y = 12$ and $y = 12$	= 3x, what is the
	value of y?	
	a) 2 b) 3
	c) 4 c	l) 6
19.	If $2x + 5y = 0$ and $2x$	x = 3y, then find
	the value of $(x, y) = W$	hat?
	a) (0,0) b	b) (0,1)
• •	c) (-1,0) c	l) (0, -1)
20.	Which of the followin	g is true for the
	equations $2x + y = 8$ as	nd $3x - 2y = 5?$
	a) $3x - 2(8 - 2x) = 3$	
	b) $3x + 2(8 - 2x) =$	5
	c) $3X - 2(8 + 2X) =$	= 5) — 5
21.	What will be the v	alue of x after
	solving two equations	3x + y = 15 and
	y = 8 - 2x?	
	a) 5 b) 6
	c) 7 d	l) 8
22.	The solution of t	he system of
	equations $x + 2y = 3 =$	4x - y is $(x, y) =$
	What?	/ • /
	a) (1,1) b) (2,2)

d) $\left(\frac{1}{2}, \frac{1}{2}\right)$ c) (3,3) If 2x + y = 8 and x + y = 5 then What 23. is the value of (x, y)? b) (2,3) a) (1,5) c) (3,2) d) (0,8) ax - cy = 0, $ay - cx = a^2 - c^2$ 24. If and y = a then find the value of (x, y)= What? a) (*c*, a) b) (*a*, c) c) (-c, -a)d) (−*c*, a) 25. the In system of equations $\begin{array}{c} x+y=6\\ x-y=-3 \end{array}$ then find the value of (x, y)= What? a) $\left(\frac{3}{2}, \frac{9}{2}\right)$ b) (3,9) d) $\left(\frac{-3}{2}, \frac{-9}{2}\right)$ c) (2,2) 26. What is the solution of the system of equations $\begin{array}{c} x+y=2\\ x-y=2 \end{array}$? a) (2,0) b) (2,2) c) (2,3) d) (0,2) Which of the following will be correct 27. if the formulae of cross multiplication is applied in the system of equations 3x - 5y + 9 = 05x - 3y - 1 = 0? a) $\frac{x}{22} = \frac{y}{44} = \frac{1}{16}$ b) $\frac{x}{32} = \frac{y}{48} = \frac{1}{16}$ c) $\frac{x}{48} = \frac{y}{32} = \frac{1}{16}$ d) $\frac{x}{16} = \frac{y}{48} = \frac{1}{32}$ If $\frac{x}{-17} = \frac{y}{8}$? and y = 4 then what is the 28. value of x? a) $-8\frac{1}{2}$ b) $8\frac{1}{2}$ d) $\frac{-17}{4}$ c) $\frac{17}{4}$ 29. For which one of the following equation is the adjoining chart correct? - 1 0 3 Х 5 3 -3 y a) 2x - y = 3b) 2x + y = 3c) 4x - 3y = 6d) 4x + 3y = 6Which of following is the solution of 30. the system of equations $\frac{x}{a} + \frac{y}{b} =$ 2 and $ax + by = a^2 + b^2$? a) (x, y) = (-a, -b)

b) (x, y) = (a, b)c) (x, y) = (a, -b)d) (x, y) = (-a, b)If $\frac{x}{2} + \frac{y}{3} = 1$ and $\frac{x}{3} + \frac{y}{2} = 1$ which of 31. the following is the relation between x and y? a) x < yb) x > yc) $x \neq y$ d) x = yWhich of the following is equal to the 32. system of equations a(x + y) = b(x - y)= 2ab? a) x + y = 2a and x - y = 2ab) x + y = 2a and x - y = 2bc) x + y = 2b and x - y = 2ad) x + y = 2ab and x - y = 2ab33. What is the solution of the equations 2x - y = 0 and -y + 3x = 19? a) (15,25) b) (19,38) c) (16,26) d) (0,0) If x = 1 or $x = \frac{1}{3}$ and y = 2 - x then 34. find the value of (x, y) = What? a) $(1,1), \left(\frac{1}{3}, \frac{3}{5}\right)$ b) $(1,1), (3,\frac{5}{2})$ c) $(1, 1), (3, \frac{3}{5})$ d) $(1,1), \left(\frac{1}{2}, \frac{5}{2}\right)$ 35. **Observe the following equations:-**i. 2x + 3 = 9ii. $\frac{x}{2} - 2 = -1$ iii. 2x + 1 = 5Which one of the following is correct? a) i and ii b) ii and iii c) i and iii d) i, ii and iii 36. i. The equations 2x - y = 0 and x - 2y= 0 are mutually independent. ii. Graph of the equation x - 2y = 0passes through the point (-3, 1). iii. Graph of the equation 3x + 4y = 1 is a straight line. Which one of the following is correct? a) i and ii b) i and iii

- c) ii and iii d) i, ii and iii
- 37.

	-2	3	-7]
	1	-1	3	-
	Observe th	e followin	g equatior	is :
-	i. The equ	ation 2x -	5y = 3 and	d x + 3y
	= 1 are	mutually ir	ndependent	t.
-	ii. Graph	of the eq	uation $\frac{x}{3}$ -	$+\frac{y}{4}=1$
	passes t	hrough the	point (3, 0)).
-	iii. Graph o	of the equa	tion $3x - \frac{1}{2}$	y = 3 is
	a straig	ht line.		_
	Which one	of the foll	owing is c	orrect?
	a) i and ii		b) ii and	
	c) i and ii	i a	d) i, ii an	d iii
	Answer to	the que	stions (38	5 - 41)
1	using the f	ollowing ir	iformation	1
	2x + 3y = 9 5x + 4y = 15	is a syste	m of equa	tions.
38.	What is th	e required	d value of	y from
1	the first eq	uation?		
	a) Consist	ent and uni	que solution	on
	b) Consist	ent and inf	inite soluti	ons
	c) Inconsi	stent and u	nique solut	tion
20	d) Inconsi What is th	stent and n	o solution d volue of	v from
39.	the first og	untion?	i value of	y mom
	$\frac{8+}{8+}$	2x	1.) 2x	x − 8
	a) $y = \frac{1}{3}$		b) $y = -$	3
	c) $y = \frac{8}{3}$	2x	d) $y = \frac{1}{8}$	$\frac{3}{-2x}$
40.	Which of t	the followi	ng is the	value of
2	x?			
	a) —1		b) 1	
	c) 3		d) 2	
41.	The solu	tion of	the syst	em of
	equations.	Find the	value of (x , y) =
	What?		_	
	a) $(-2, 1)$		b) (-1,	3)
	c) (2,1)		d) (1,2)	
	Answer to	the que	stions (4)	1 - 43)
1	using the f	ollowing ir	iformation	1
:	x + 2y = 3 $2x + my = 6$	is a syster	n of equati	ons.
42.	For what	value of	m, there	e exists
1	infinite sol	lutions of	the given	system
	of equation	ns?	1 \ 0	
	a) 1		b) Z	
12	c) 3	b	d) 4	
43.	$\mathbf{II} \mathbf{M} = \mathbf{I}_{\mathbf{i}}$, now ma	ny solutio	uns are
1	unere in	the gr	ven syst	em oi
	equations:			

a)	0	b)	1
c)	2	d)	In

- d) Infinite
- A common point of the given system 44. of equations lies on the x-axis, what is that point?
- b) $(0,\frac{3}{2})$ a) (0,0) c) (3,0) d) (-3,0) Answer to the questions (45 - 47) using the following information $\frac{x}{a} + \frac{y}{b} = 2 \dots \dots \dots \dots \dots (i)$ $ax + by = a^2 + b^2 \dots \dots \dots \dots (ii)$ 45. Which of the following is the simplified form of equation (i)?
 - a) bx + ay = 2ab
 - b) ax + by = 2ab
 - c) $bx + ay = a^2 + b^2$ d) bx + ay - 2ab = 0
- **46.** Which of the following will be obtained after adding the simplified value with the equation (ii)?
 - a) x + y = a + b
 - b) x y = a + b
 - c) $x + y = a^2 + b^2$
 - d) $x + y = a^2 b^2$
- 47. Which of the following is the solution of the given system of equations?
 - a) (a,b) b) (-a, -b)
 - d) (-b, -a)c) (b,a)
 - Answer to the questions (48 49) using the following information:

$$\frac{x}{2} + \frac{y}{3} = 1$$
 and $\frac{x}{3} + \frac{y}{2} = 1$

- **48.** What is the value of x in the above system of equations?
 - a) $\frac{5}{6}$ b) $\frac{6}{5}$ c) 1 d) 6
- What is the value of y? 49.
 - a) 1 b) 12 d) $\frac{6}{5}$
 - c) $\frac{5}{6}$

Creative Questions:

A system of simple equation are : 1. 7x + 2y = 203x - 4y = -6

a) Justify whether the system of equations are consistent and mutually dependent.

- b) Solve the system of equation by the method of cross- multiplication.
- c) Solve the system of equation with the help of graph and verify the correctness of the obtained value from (b).
- 2. (i) $bx + ay = a^2 + b^2$ 2ax - by = ab(ii) 12x + 5y = 70 7x - 12y = 11
 - a) State whether the system of equation is consistent or not x + 6y = 13. 3x + 18y = 27
 - b) Determine (x, y) from (i), using the method of substitution.
 - c) Solve the system of equation using the method of cross multiplication in (ii).
- 3. Difference of the two digits of a number consisting of two digits is 4. If the places of the digits are interchanged, sum of the numbers so found and the original number will be 110.
 - a) Form a system of equation, where digit of the units place be x and digit of the tens place be y. (x > y) 2.
 - b) Find (x, y) by solving the system of equations by the method of cross multiplication. What is the number?
 - c) Find the solution of the system of equation by graph.
- 4. a(x + y) = b(x y) = 2ab is a system of equations with two variables.
 - a) From the given system of equations form two different equations.
 - b) Solve the system of equations by the method of substitution.

c) Solving the system of equations by the method of cross-multiplication and justify the correctness of the previous solution.

Exercise-12.3

Creative Multiplication Choice Questions :-

- 1. What is the distance of the point (- 5, -3) from x- axis? [C.B.- 19] b) -3 Unit a) -5 Unit c) 3 Unit d) 5 Unit 2. If the digits of once place is x and that of tens place is y then what is the number? [**D.B.-**17] a) Xy b) x + yc) 10y + xd) 10x + y3. Which quadrant of this point (3, - 5)? [C.B.- 17] a) 1st b) 2nd c) 3^{rd} d) 4^{th} 4. On which graph of the following equations the point (2, 3) is? [C.B.- 17] a) x - y = 1b) 2x + y = 7c) x + 3y = 5d) 2x + y = 6
- 5. For which one below the adjoining chart is correct? [Ctg.B.- 17]

X	0	2	4
Y	-4	0	4
a) $y = x$	-4	b) y = 8	S - X
c) $y = 4$	-2x	d) y = 2	2x - 4
If $\mathbf{v} = -2$) in the ea	uation 2v	$\pm 3y - 2$

- 6. If x = -2 in the equation 2x + 3y = 2the getting point lies in which quadrant? [S.B.-17] a) 1^{st} b) 2^{nd} c) 3^{rd} d) 4^{th}
- 7. For which one the following equations is the adjoining chart correct?

		[D	j.B 16]
X	-1	0	3
Y	5	3	-3

a) 2x - y = 3 b) 2x + y = 3

c)
$$4x - 3y = 6$$
 d) $4x + 3y = 6$

8.

If x = -3 put in the equation 2x + 3y = 1 in which quadrant the obtained

point of the equation is located? [Ctg.B.- 16] b) 2nd a) 1st d) 4th c) 3rd 9. To definite a graph how many points are needed? [J.B.- 16] a) One b) One and more c) Two and more d) Uncountable 10. On which graph of the following equations the point (2, 0), (4, 4) and (0, - 4) are? [B.B.- 16] a) y = 4 - 2xb) y = 8 - xc) y = x - 4d) y = 2x - 411. The graph of which equation passes through the origin? a) x = 2yb) x = 2c) y = 2d) x + y = 212. What is the perpendicular on the horizontal plane? a) Vertical line b) Below line c) Horizontal line d) Streak line 13. What is the angle between horizontal plane and the vertical plane? a) 0⁰ b) 360⁰ c) 180° d) 90⁰ y = 2x + 1 is a function----14. [J.B.- 19] i. (1, 3) is a point of the graph ii. The graph is a straight line iii. The graph is a circle Which one of the following is correct? a) i and ii b) i and iii c) ii and iii d) i, ii and iii 15. Observe the following information. i. 2x - 5y = 3 and x + 3y = 1 are mutually dependent. ii. $\frac{x}{3} + \frac{y}{4} = 1$ passes through the point (0, 4) iii. 3x - y = 3 cuts the x and y axis at (1, 0) and (0, -3) respectively. Which one of the following is correct? b) i and iii a) i and ii c) ii and iii d) i, ii and iii 16. **Observe the following information :** i. The equations 2x - 5y = 3 and x + 3y = 33y = 1 are mutually independent.

ii. The equation $\frac{x}{3} + \frac{y}{4} = 1$ contains the point (3, 0). iii. Graph of the equation 3x - y = 3 is a straight line. Which one of the following is correct? a) i and ii b) i and iii d) i, ii and iii c) ii and iii Considering the following information answer to the question no. 17 and 18 : $\frac{x}{2} + \frac{y}{3} = 3$ and $x + \frac{y}{6} = 3$, the system of equation is consistent and mutually independent. 17. Which one of the following point is satisfied 1st equation? a) (3, 0) b) (3, 6) d) (4, 3) c) (1, 12) 18. What is the point where 2nd equation intersects the x- axis? a) (3, 0) b) (-3,0) d) (0, - 3) c) (0, 3)3x - 2y = 74x + y = 3 How many solutions will be 19. obtained from the graph of this system of equations? a) No solution b) Infinite c) Two d) One 20. If two straight lines are perpendicular to each other how many common points do they have? a) One b) Three d) Four c) Two 21. What is the co-ordinate of the intersecting point of two axis? a) (1, 1) b) (0, 0) c) (0, 1) d) (1,0) 22. How many points are there in the graph of the simple equation x - y =2? a) One b) Two d) Infinite c) Three 23. Which one of the following points lies on the line 2x + 3y = 5? a) (1, 1) b) (-1, -1) c) (-1,1) d) (1, -1) Which point lies in the 4th quadrant? 24. b) (-5, -2) a) (5, 2)

c) (-5,2) d) (2, - 5) What is the graph of the equation $\frac{x}{2}$ + 25. $\frac{y}{3} = 3?$ b) Circle a) Straight line c) Ellipse d) Hyperbola Which point lies on the graph of $\frac{x}{2} + \frac{y}{3}$ 26. = 3? b) (-3, -2) a) (2, 3) c) (0, 6) d) (6,0) 27. Which one of the following points lies on the line 2x + 4y = -4? a) (-2,0) b) (0, - 2) d) (0, -8) c) (0, -4)28. Which point is not lie on the straight line 3x - 2y = 5? a) (3, 2) b) (1, -1) c) (2, 3) d) (5, 5) 29. Which of the following pint lies on the x-axis? a) (1,0) b) (2, 1) c) (0, 4) d) (0, - 4) 30. Which of the following point lies in the 2nd quadrant? a) (-2, -7) b) (2, 7) c) (-2,7) d) (2, -7) 31. In which quadrant the point (- 2, - 6) is lied on? a) 1st b) 2nd c) 3rd d) 4^{th} 32. What is the type of the graph of the equation $\frac{x}{3} - \frac{y}{2} = 2?$ a) Straight line b) Circle c) Parabola d) Hyperbola Which of the following point lies on 33. the graph of the equation $\frac{x}{2} + \frac{y}{3} = 3$? b) (-3, -2) a) (2, 3) c) (0, 6) d) (6,0) 34. Which of the following point lies on the y-axis? b) (4, 0) a) (0, 4) d) (4, 4) c) (8, 0)35. On which of the following equation lies the point (2, 3)? a) x + y = 2b) x + 3y = 5d) 2x + y = 6c) 2x + y = 7

What is the co-ordinate of the point 36. placed at the distance 3 and 4 unit from the axis x and y respectively? b) (-3, -4) a) (3, 4) c) (3, -4) d) (-4,3) 37. Where are the situation of two points (- 3, 1) and (3, - 1) are in which quadrant of the graph paper? b) 2^{nd} and 4^{th} a) 2^{nd} and 3^{rd} c) 1^{st} and 3^{rd} d) 1^{st} and 4^{th} 38. In the solution of any system of equations, ordinate is the twice of the abscissa and the equations are coincide on the third quadrant, which of the following is the solution? a) (-2, -4) b) (-4,2) c) (2, 4) d) (-2,4) 39. In which of the following quadrant the common point of the system of equations $\begin{cases} x + y = 0 \\ x - y = 2 \end{cases}$ is placed on? b) 2nd a) 1st d) 4th c) 3^{rd} **40.** How many squares are to considered as an unit to construct the point (3, 6) as the point (9, 18)? a) 1 b) 3 d) 9 c) 6 41. What is the distance between the point (0, 4) and (0, - 4)? a) – 8 b) 0 c) 4 d) 8 42. Which of the following equation goes through the points (0, 0) and (1, -1)? a) x - 2y = 0b) x + y = 0c) x + 5y = 0d) y + 5x = 043. Which of the following equation will go through the origin? a) x - y = 0b) x + 3y = 10c) x + 2y = 5d) x + 3y = 4**44**. In which of the following point of the graph of the system of equations $\begin{array}{c} 2x + y = 3 \\ 4x + 2y = 12 \end{array}$ will coincide? a) (0, 0) b) (10, 10) c) (20, 20) d) None

45. Which of the following is the common point of the equations x + y = 2 and xa) i and ii -y = 2?a) (2, 0) b) (0, 2) c) (-2, -2) d) (2, 2) **46**. Which of the following represents the equation of straight line? b) $x^2 + y^2 = 25$ a) 3x - 3y = 0d) $ax^2 + by^2 + c$ c) $x = \frac{1}{y}$ = 047. The system of equations 3x - 7 = 3 - 32x coalesces on the fourth quadrant. Which of the following is the solution? a) (2, 1) b) (2, -1) c) (-2, 1) d) (-2, -1) 48. Abscissa of a point is -2 and the summation of the abscissa and ordinate is 7, what is the co-ordinate of that point? a) (2, 7) b) (5, 2) c) (-2,9) d) (-2,5) 49. Х 0 -1 2 Y -1 -3 3 Which table is correct? a) y = 5x - 1b) y = 4x - 1c) y = 3x - 1d) y = 2x - 150. Which one of the following passes through the origin? a) 3x - 2y = 0b) x - y = 1c) x = 5d) x + y + 5 = 051. Which of the following will be constructed after placing the points (0, 0), (3, 3) and (- 3, - 3) in the graph paper? b) Curvilinear Straight line a) line d) Hyperbola c) Circle What will be graph of the equation 2x 52. + y = 0?a) Polynomial line b) Straight line c) Hyperbola d) Parabola representation 53. Graphical of the equation y = 2x is – i. It runs through origin ii. It intersects both the axes iii. It is a straight line

Which one of the following is correct?

- b) i and iii
- c) ii and iii

d) i, ii and iii

Creative questions :

1. If 1 is subtracted from numerator and 2 is added to denominator of a fraction, the fraction will be $\frac{1}{3}$. Again, if 2 is subtracted from numerator and 3 is subtracted from denominator then the fraction will be equal to 1.

[S.B.- 17]

- a) From a system of equation by the fraction $\frac{x}{y}$.
- b) Find the fraction.
- c) Find the solution of the system of equation by graph.
- 2. A system of simple equations are : 7x + 2y = 20
 - 3x 4y = -6. [**D.B.-**16]

a) Indicate the number of solutions.

- b) Find (x, y) by solving the system of equations by the method of crossmultiplication.
- c) Solve the given equations by graph.

3. 3x - 4y = 0

2x - 3y = -1

- [C.B.- 16]
- a) Justify whether the system of equations are consistent and mutually dependent.
- b) Solve the system of equation by the method of substitution.
- c) Solve the system of equations with the help of graph and show that the values of (x, y) is equal to the values of (x, y) obtained from (b).
- 4. If 7 is added to the numerator of a fraction, the fraction will be integer 2. Again, if 2 is subtracted from the

denominator of a fraction, the fraction will be integer 1.

- a) from a system of equations taking $\frac{x}{y}$ as the fraction.
- b) Find (x, y) by solving the system of equations using crossmultiplication method. What is the fraction?
- c) Draw the graph of the equations and verify the solution.

Exercise-12.4

Creative Multiplication Choice Questions

 For which of the following conditions is the system of equations ax + bx + c = 0 and px + qy + r = 0 consistent and mutually independent?

a)	$\frac{a}{p} \neq \frac{b}{q}$	b) $\frac{a}{p} = \frac{b}{q} = \frac{c}{r}$
c)	$\frac{a}{p} = \frac{b}{q} \neq \frac{c}{r}$	d) $\frac{a}{p} = \frac{b}{q}$

- 2. If x + y = 4 and x y = 2, which one of the following is the value of (x, y)?
 - a) (2, 4) b) (4, 2)
 - c) (3, 1) d) (1, 3)
- 3. If x + y = 6 and 2x = 4, which is the value of y?

a)	2	b)	4
c)	6	d)	8

4.

X	0	2	4
Y	-4	0	4

For which one of the following equation is the adjoining chart correct?

a) y = x - 4 b) y = 8 - x

c)
$$y = 4 - 2x$$
 d) $y = 2x - 4$

- 5. If 2x y = 8 and x 2y = 4 then find the value of x + y = What?
 - a) 0 b) 4 c) 8 d) 12
- 6. The equations x y 4 = 0 and 3x 3y 10 = 0---
 - i. Are mutually dependent
 - ii. Are mutually consistent
 - iii. Do not have any solution

Which one of the following is correct?

b) iii

a) ii

c) i and iii d) ii and iii

On the basis of information given below answer questions no. (7 to 9) : Length of the floor of a rectangular room is 2 metres more than its breadth and perimeter of the floor is 20 metres. For decorating the floor with mosaic it costs Tk. 900 per square metre.

- 7. What is the length of the floor of the room in metre?
 - a) 10 b) 8 c) 6 d) 4
- 8. What is the area of the floor of the room in square metre?
 - a) 2.4 b) 32
 - c) 48 d) 80
- 9. How much taka will be the total cost for decorating the floor with mosaic?
 - a) 72000 b) 43200
 - c) 28800 d) 21600

10. The breadth of a rectangular garden is 4 metres less than of its length. If the perimeter of it is 48 metres, what is its breadth? [Ctg.B.- 16]

a)	18 metre	b)	14 metre
c)	10 metre	d)	6 metre
An	s: c		

11. Which one of the following equation centre of mid-point? [Dj.B.- 15]

- a) 2x = 3y + 2 b) x + 3y = 5
- c) 3x = 8y + 2 d) 4x = 3y
- 12. In which quadrant the point (3, 5) is
situated?[J.B.- 15]
 - a) 1st Quadrant b) 3rd Quadrant
 - c) 3^{rd} Quadrant d) 4^{th} Quadrant
- 13. What is the distance of the point (- 10, 7) from y- axis?
 - a) 10 b) -7
 - c) 7 d) -10
- 14. Sum of the numerator and denominator of a proper fraction is 5 and their difference is 1. What is the fraction?

2) -	
<i>a)</i> 5	6) 4
c) $\frac{2}{3}$	d) $\frac{3}{2}$
15. Observe the follow	ving information.
i. The equations 2	2x - y = 0 and $x - 2y$
= 0 are mutually	y dependent.
ii. Graph of the eq	uation $x - 2y + 3 = 0$
passes through	the point (- 3, 0).
iii. Graph of the eq	uation $3x + 4y = 1$ is
a straight line.	
Which one of the f	ollowing is correct?
a) i and ii	b) <i>ii and</i> iii
c) i and iii	d) i, ii and iii
16. Observe the follow	ving information :
i. The graph of th	e equation $2x - y - 4$
= 0 passes point	t (0, - 4).
ii. The graph of th	e equation $4x - 5y - $
17 = 0 is straight	it line.
iii. Equation 3x – 5	5y = 7 and $6x - 10y = 10$
5 are independe	nt.
Which one of the f	ollowing is correct?
a) i and ii	b) ii and iii
c) i and iii	d) i, ii and iii
Ans: d	
The length of a re	ectangular garden is
15 metres more th	han its breadth and
perimeter of the g	arden is 150 metre.
Answer to the qu	arden is 150 metre. estions No. (8 to 9)
Answer to the qu from the above inf	arden is 150 metre. estions No. (8 to 9) formation :-
Answer to the garantee of the garantee of the garantee from the above inf 17. What is the lengt	arden is 150 metre. estions No. (8 to 9) formation :- th of the garden in
Answer to the gu Answer to the qu from the above inf 17. What is the lengt metre?	arden is 150 metre. estions No. (8 to 9) formation :- th of the garden in [C.B 16]
Answer to the qu from the above inf 17. What is the lengt metre? a) 40 c) 50	arden is 150 metre. estions No. (8 to 9) Formation :- th of the garden in [C.B 16] b) 45 d) 55
Answer to the qu from the above inf 17. What is the lengt metre? a) 40 c) 50	arden is 150 metre. estions No. (8 to 9) formation :- th of the garden in [C.B 16] b) 45 d) 55
Answer to the gu Answer to the qu from the above inf 17. What is the lengt metre? a) 40 c) 50 18. What is the area square metre?	arden is 150 metre. estions No. (8 to 9) formation :- th of the garden in [C.B 16] b) 45 d) 55 a of the garden in
Answer to the qu from the above inf 17. What is the lengt metre? a) 40 c) 50 18. What is the area square metre? a) 1250	arden is 150 metre. estions No. (8 to 9) formation :- th of the garden in [C.B 16] b) 45 d) 55 a of the garden in b) 1300
Answer to the qu from the above inf 17. What is the lengt metre? a) 40 c) 50 18. What is the area square metre? a) 1250 c) 1350	arden is 150 metre. estions No. (8 to 9) formation :- th of the garden in [C.B 16] b) 45 d) 55 a of the garden in b) 1300 d) 1400
Answer to the qu from the above inf 17. What is the lengt metre? a) 40 c) 50 18. What is the area square metre? a) 1250 c) 1350 Answer the question	arden is 150 metre. estions No. (8 to 9) formation :- th of the garden in [C.B 16] b) 45 d) 55 a of the garden in b) 1300 d) 1400 ons No. (10 to 11) on
Answer to the qu from the above inf 17. What is the lengt metre? a) 40 c) 50 18. What is the area square metre? a) 1250 c) 1350 Answer the question the basis of the basis	arden is 150 metre. estions No. (8 to 9) formation :- th of the garden in [C.B 16] b) 45 d) 55 a of the garden in b) 1300 d) 1400 ons No. (10 to 11) on asis of the following
Answer to the qu from the above inf 17. What is the lengt metre? a) 40 c) 50 18. What is the area square metre? a) 1250 c) 1350 Answer the question the basis of the basis information :	arden is 150 metre. estions No. (8 to 9) formation :- th of the garden in [C.B 16] b) 45 d) 55 a of the garden in b) 1300 d) 1400 ons No. (10 to 11) on asis of the following
Answer to the gu from the above inf 17. What is the lengt metre? a) 40 c) 50 18. What is the area square metre? a) 1250 c) 1350 Answer the question the basis of the basis information : The length of a real	arden is 150 metre. estions No. (8 to 9) formation :- th of the garden in [C.B 16] b) 45 d) 55 a of the garden in b) 1300 d) 1400 ons No. (10 to 11) on asis of the following
Answer to the qu from the above inf 17. What is the lengt metre? a) 40 c) 50 18. What is the area square metre? a) 1250 c) 1350 Answer the question the basis of the basis information : The length of a real metre more than	arden is 150 metre. estions No. (8 to 9) formation :- th of the garden in [C.B 16] b) 45 d) 55 a of the garden in b) 1300 d) 1400 ons No. (10 to 11) on asis of the following ectangular room is 2 n its breadth and
Answer to the gu from the above inf 17. What is the lengt metre? a) 40 c) 50 18. What is the area square metre? a) 1250 c) 1350 Answer the question the basis of the basis information : The length of a real metre more that perimeter is 32 metric the basis of the basis	arden is 150 metre. estions No. (8 to 9) formation :- th of the garden in [C.B 16] b) 45 d) 55 a of the garden in b) 1300 d) 1400 ons No. (10 to 11) on asis of the following ectangular room is 2 n its breadth and etre.
Answer to the gu from the above inf 17. What is the lengt metre? a) 40 c) 50 18. What is the area square metre? a) 1250 c) 1350 Answer the question the basis of the bas information : The length of a rea metre more that perimeter is 32 metric 19. What is the length	arden is 150 metre. estions No. (8 to 9) formation :- th of the garden in [C.B 16] b) 45 d) 55 a of the garden in b) 1300 d) 1400 ons No. (10 to 11) on asis of the following ectangular room is 2 n its breadth and etre.
Answer to the ga Answer to the qu from the above inf 17. What is the lengt metre? a) 40 c) 50 18. What is the area square metre? a) 1250 c) 1350 Answer the question the basis of the bas information : The length of a rea metre more that perimeter is 32 me 19. What is the length room in metre?	arden is 150 metre. estions No. (8 to 9) formation :- th of the garden in [C.B 16] b) 45 d) 55 a of the garden in b) 1300 d) 1400 ons No. (10 to 11) on asis of the following ectangular room is 2 n its breadth and etre. h of the floor of the [R.B 16]

a) 10 b) 9 c) 8 d) 7

20.	0. What is the area of the floor of the						
	roon	n in squ	are metre?	[]	R.B 16]		
	a) 3	31.5	b) 36			
	c) 6	53	d) 126			
21.	The	value	of which	fracti	ion will		
	become $\frac{1}{2}$ if 5 is subtracted from both						
	numerator and denominator?						
	a) $\frac{7}{6}$	7	b	$) \frac{9}{7}$			
	$c) = \frac{1}{2}$	3	h	$\frac{5}{5}$			
	The	5 volue	of which	3	ion will		
<i>22</i> .	1 ne						
	beco	$\frac{1}{2}$ if	3 is subtra	icted fr	om both		
	num	erator a	nd denom	inator?			
	a) $\frac{4}{5}$	5	b	$\frac{3}{2}$			
	c) $\frac{5}{2}$	5	d	$) \frac{2}{2}$			
23.	If th	⁺ ne lengtł	n of a rect	ः angulaı	. garden		
	is 2	0 metre	and wid	th is 15	5 metre.		
	Wha	at is its h	alf-perime	eter?			
	a) 2	25	b) 30			
	c) 3	35	d) 40			
24.	The	digit .	6 41	1 .	P		
	Inc	uigit	of the or	les pla	ce of a		
	num	ber of 2	of the or 2 digits is	es pla 4 more	ce of a e than 2		
	num time	ber of 2 the d	of the or 2 digits is igit of ten	4 more s place	ce of a e than 2 . Which		
	num time one	ber of 2 s the d	of the or 2 digits is igit of ten llowing is	4 more s place the num	ce of a e than 2 . Which nber?		
	num time one a) 3	ber of 2 of the fo	of the or 2 digits is igit of ten llowing is b	4 more 4 more 5 place the num) 18	ce of a e than 2 . Which iber?		
25	num time one a) 3 c) 2	aber of 2 abs the di of the fo 32 26 volue	of the or 2 digits is igit of ten llowing is b d	4 more 5 place the num 18 28 front	ce of a e than 2 . Which iber?		
25.	num time one a) 3 c) 2 The	ber of 2 s the d of the fo 32 26 value 5	of the or 2 digits is igit of ten llowing is b d of which	4 more 4 more s place the num 18 28 fraction	ce of a e than 2 . Which iber? ion will		
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25.	num time one a) $\begin{pmatrix} 2\\ c \end{pmatrix}$ $\begin{pmatrix} 2\\ c \end{pmatrix}$ The beco and a) $\begin{pmatrix} 4\\ c \end{pmatrix}$	angle of the form	of the or 2 digits is igit of ten llowing is d of which 1 is adde nator each b d	les place 4 more s place the num) 18) 28 1 fraction d to num ?) $\frac{5}{4}$) $\frac{11}{42}$	ce of a e than 2 . Which ber? ion will merator		
25. 26.	num time one a) $\begin{pmatrix} 2\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$	ther of 2 s the d of the fo 32 26 value ome $\frac{5}{6}$ if denomin	of the or 2 digits is igit of ten llowing is d of which 1 is adde nator each b d the digits of	les place 4 more s place the num) 18) 28 h fraction d to num ?) $\frac{5}{4}$) $\frac{11}{13}$ of a num	ce of a e than 2 . Which iber? ion will merator		
25. 26.	num time one a) $\frac{3}{2}$ c) $\frac{2}{2}$ The beco and a) $\frac{4}{5}$ c) $\frac{5}{2}$ The digit	angle of the form of 2 s the distribution of the form of the for	of the or 2 digits is igit of ten llowing is b d of which 1 is adde nator each b d the digits o ad the proo	les place 4 more s place the num) 18) 28 1 fracti d to nu ?) $\frac{5}{4}$) $\frac{11}{13}$ of a num luct is 2	ce of a e than 2 . Which aber? ion will merator aber of 2 20. What		
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- 28. The length of a rectangular garden is3 times the width and perimeter is 36 metre. What is the width (in metre)?
 - a) 5.7 b) 5.6 c) 4.5 d) 6.4
- 29. The sum of the square of two positive integers is 5 and product is 2. What is the difference of their squares?

b) 2

d) 5

- a) 1
- c) 3
- 30. The unit place and tens place digits of a two digit number are y and x respectively. What is the number?
 - a) 10yx b) 10x + y

c) x + 10y d) 10(x + y)

- 31. The digit of the units place of a number consisting of two digits is 1 more than 8 times the digit of tens place. What is the number?
 - a) 29 b) 19
 - c) 18 d) 15
- 32. Difference of the digits of a number consisting of two digits is 7 and product is 12. What is the number?
 - a) 36 b) 42 c) 72 d) 97
- 33. Summation of the digits of a number consisting of two digits is 7 and product is 12. What is the number?
 - a) 34 b) 52 c) 61 d) 62
- 34. The quotient obtained by dividing the product of two digits of a number consisting of two digits is 2. Which of the following will be correct equation if the unit place digit and tens place digits are denoted by x and y respectively?

a)
$$\frac{10y+x}{xy}$$

b) $\frac{10y-x}{xy}$
c) $\frac{10x+y}{xy}$
d) $\frac{10x-y}{xy}$

35. After adding 7 with the numerator of one of the following fraction becomes2. What is the fraction?

a)	1	b)	3
a)	3	0)	5
c)	3	(b	8
	5	u)	9

- **36.** Numerator and denominator of a proper fraction are consecutive numbers. What is the fraction?
 - a) $\frac{5}{6}$ b) $\frac{6}{5}$ c) $\frac{5}{9}$ d) $\frac{5}{7}$
- 37. Present age of mother is four times the sum of the ages of her two daughters. After 5 years, if the two daughters age will be x years. Then what is the present age of the mother?

a)
$$\frac{1}{2}(x+20)$$
 b) $2(x-20)$

c) $\frac{1}{4}(x+20)$ d) 4(x-10)

- 38. If the length of a rectangle is twice of its breadth and the perimeter is 30. What is the breadth in metre?
 - a) 5 b) 10
 - c) 12.5 d) 15
- 39. If the length, breadth and diagonal of a rectangle are x, y and 15 respectively. Which of the following is correct?

a)
$$2(x + y) = 15$$

b) $\sqrt{x^2 + y^2} = 15$
c) $x^2 + y^2 = 15$
d) $x^2 + y^2 = 30$

40. The diagonal of a rectangle is 5 metre less than its half perimeter. If the length is x breadth is y, which of the following is correct?

a)
$$x^{2} + y^{2} - x - y$$
 b) $x + y - y^{2} = 0$
c) $x^{2} + y^{2} - x + y$ d) $\sqrt{x^{2} + y^{2}} = 5$
f $\sqrt{x^{2} + y^{2}} - x + y$ d) $\sqrt{x^{2} + y^{2}} - x + y^{2} = 5$
h $\sqrt{x^{2} + y^{2}} - x + y = 5$

- 41. The length of a rectangular garden is 40 metre, breadth is 10 metre, what is the length of a side of the square with equal area to the rectangle?
 - a) 10 b) 15
 - c) 20 d) 30
- 42. If the perimeter of the floor of a house is 40 metre and length is 15 metre. What is the breadth in metre?
 - a) 2 b) 5
 - c) 10 d) 20

- 43. If the length of a rectangular garden is three times of its breadth and if the area is 48 square metre. What is the breadth in metre?
 - a) 4 b) 8
 - c) 12 d) 16
- 44. A boat, rowing against the current goes 5 km per hour. Speed of current is 5 km per hor. What is the velocity of the boat in favor of current?
 - a) 5 b) 10
 - c) 15 d) 20
- 45. Difference between the square of two consecutive positive number is 9. What is the numbers?
 - a) 4 and 5 b) 6 and 7
 - c) 3 and 4 d) 5 and 6
- 46. Difference between the squares of the positive integers is 3 and the product is 2. What is the sum of their squares?a) 1b) 2
 - a) 1 c) 3 d) 5
- 47. The speed of a boat in favor of current and against of current are 15 and 5 km/hour respectively and speed of boat is x and speed of current is y---
 - i. x + y = 41
 - ii. x y = 5
 - iii. x = 10 and y = 5

Which one of the following is correct?

- a) i and ii b) ii and iii
- c) i and iii d) i, ii and iii
- 48. Initial salary of any labor is Tk. x and annual increment Tk. y--
 - i. Salary after 4 years is (x + 4y).
 - ii. Salary after 8 years is (x + 8y).
 - iii. If y = 125, increment after 4 years is Tk. 500.

Which one of the following is correct?

- a) i and ii b) ii and iii
- c) i and iii d) i, ii and iii
- **49.** If $\frac{x}{y}$ is a proper fraction ---
 - i. Then y > x.
 - ii. Then $\frac{x}{y} + 1$ is an improper fraction.
 - iii. Then x > y.
 - Which one of the following is correct?

- a) i and ii b) ii and iii
 - d) i, ii and iii

The digit in tenth place of a number consisting of two digits is thrice the digit in unit place be x. Using the information answer the questions 50 and 51.

50. Which one is the number?

c) i and iii

- a) 3x b) 4x
- c) 13x d) 31x
- 51. If the place of the digits are interchanged, what will be the number?
 - a) 3x b) 4x c) 13x d) 33x

Creative Questions :

- 1. If 5 is added to the sum of digits of a two digits number then it is equals to 3 times of the digit of tens place. Again the number obtained by interchanging the places of the digits is less by 9 than the original number.
 - a) From two equations according to the stem.
 - b) Solve the two equations by the method of cross multiplication and determine the number.
 - c) Solve the equations with the help of graph and verify the correctness of result obtained in "b".
- 2. The length and breadth of a rectangular room is x and y metre. The relation between the length and breadth of the floor of the room is shown by the equation : 6x - y = 104 and 3x + 2y = 92.
 - a) Find out whether the equations are consistent or not.
 - b) Find out the length and breadth of the floor of the room.
 - c) If the perimeter of the rectangular floor of the room is equal to the perimeter of a square floor, then find the cost for covering the square floor with carpet at 25.25 taka per square metre?