

INTEGRATED EXERCISE

Very Short Answer/Objective Type Questions [1 Mark]

- One equation of a pair of dependent linear equations is $-5x + 7y = 2$, the second equation can be:
 (a) $10x + 14y + 4 = 0$ (b) $-10x - 14y + 4 = 0$
 (c) $-10x + 14y + 4 = 0$ (d) $10x - 14y = -4$
- The pair of linear equations $2x - 3y = 1$ and $3x - 2y = 4$ has:
 (a) One solution (b) Two solutions
 (c) No solution (d) Many solutions
- Two lines are given to be parallel. The equation of one of the lines is $4x + 3y = 14$. The equation of the second line can be
 (a) $3x + 4y = 14$ (b) $8x + 6y = 28$
 (c) $12x + 9y = 42$ (d) $-12x = 9y$
- Match the Column:

(1)	$2x + 5y = 7$ $3x + 4y = 7$	(A)	Inconsistent pair of equations
(2)	$2x + 5y = 7$ $4x + 10y = 7$	(B)	Consistent pair of equations
(3)	$2x + 5y = 7$ $4x + 10y = 14$	(C)	Dependent consistent pair of equations

- $1 - A, 2 - C, 3 - B$
 - $1 - B, 2 - A, 3 - C$
 - $1 - C, 2 - A, 3 - B$
- $y = a + \frac{b}{x}$ where a, b are real numbers, if $y = 1$ when $x = -1$ and $y = 5$ when $x = -5$, then $a + b$ equals
 (a) -1 (b) 0
 (c) 11 (d) 10
- For what value of k , the pair of equations $2x + 3y + 5 = 0$ and $kx + 4y = 10$, has a unique solution?
 (a) $k = \frac{8}{3}$ (b) $k \neq \frac{8}{3}$
 (c) $k = 3$ (d) $k \neq 3$

- Determine the value of k for which the following system of equations has no solution:
 $kx + 2y - 1 = 0, 5x - 3y + 2 = 0$
- For what value of k the following pair of linear equation has no solution?
 $2x + ky = 1$
 $6x + 4y = 3$
- For what value of a the following pair of linear equation has infinitely many solution?
 $ax - 3y = 1$
 $-12x + ay = 2$
- For what value of a the following pair of linear equation has infinitely many solutions?
 $2x + ay = 8$
 $ax + 8y = a$

- Find whether the following pair of equations has no solution, unique solution or infinitely many solutions.
 $5x - 8y + 1 = 0;$
 $3x - \frac{24}{5}y + \frac{3}{5} = 0$

Short Answer Type I Questions [2 Marks]

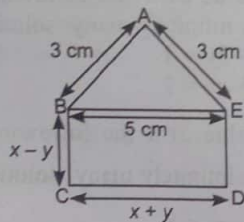
- Solve:
 $99x + 101y = 499$
 $101x + 99y = 501$ [CBSE 2011]
- Show that the system of equations is consistent and dependent:
 $x - 5y = 6, 2x - 10y = 12.$
- For what value of k , the following system of equations $2x + ky = 1, 3x - 5y = 7$ has
 (i) a unique solution (ii) no solution
- Find whether the following pair of linear equations is consistent or inconsistent:
 $x + 3y = 5; 2x + 6y = 8$ [CBSE 2015]

Short Answer Type II Questions [3 Marks]

16. Draw the graphs of the equations:
 $4x - 3y - 6 = 0$; $x + 3y - 9 = 0$
 Determine the co-ordinates of the vertices of the triangle formed by the lines and the y -axis.
17. Use a single graph paper and draw the graph of the following equations:
 $2y - x = 8$; $5y - x = 14$; $y - 2x = 1$
 Obtain the vertices of the triangle so obtained.

Solve the following system of equations graphically:
 Also find the points where the lines represented by the given equations intersect the x -axis. (Q. 18 and Q. 19)

18. $2x + 3y = 6$, $3x - \frac{5}{2}y = 2$
19. $3x + 2y = 14$, $x - 4y = -7$
20. Solve the following system of linear equations graphically: $2x + y = 10$, $4x - y = 8$
 Does the point $(1, -4)$ lie on any of the lines? Write its equation.
21. In the figure below, ABCDE is a pentagon with $BE \parallel CD$ and $BC \parallel DE$. BC is perpendicular to CD . If the perimeter of ABCDE is 21 cm, find the value of x and y . [CBSE 2011]



22. In a $\triangle ABC$, $\angle A = x^\circ$, $\angle B = 3x^\circ$ and $\angle C = y^\circ$. If $3y^\circ - 5x^\circ = 30^\circ$ prove that the triangle is right angled.
23. A man starts his job with a certain monthly salary and earns a fixed increment every year. If his salary was ₹ 1500 after 4 years of service and ₹ 1800 after

10 years of service, what was his starting salary and what is the annual increment?

24. If $2x + y = 23$ and $4x - y = 19$, find the values of $5y - 2x$ and $\frac{y}{x} - 2$ [NCERT Exemplar Problem]
25. Solve for x and y :
 $631x + 279y = 910$
 $279x + 631y = 910$
26. Solve for x and y :
 $254x + 309y = -55$
 $309x + 254y = 55$

Long Answer Type Questions [4 Marks]

27. Draw the graph $x - y + 1 = 0$ and $2x + y - 10 = 0$. Shade the region bounded by these lines and x -axis. Find the area of the shaded region.
28. Solve the following system of linear equations graphically: $x - y = 1$, $2x + y = 8$. Shade the area bounded by these two lines and the y -axis.
29. A boat goes 30 km up stream and 44 km down stream in 10 hours. In 13 hours it can go 40 km up stream and 55 km down stream. Determine the speed of the stream and that of the boat in still water. [Delhi 2019]
30. Two candles of equal height but different thickness are lighted. The first burns off in 6 hours and the second in 8 hours. How long, after lighting both, will the first candle be half the height of the second? [HOTS]
31. After covering a distance of 30 km with uniform speed, there occurs some defect in a train engine and thereafter, its speed is reduced to $\frac{4}{5}$ of its original speed. Consequently, the train reaches its destination late by 45 minutes. Had it happened after covering 18 km more, the train would have reached 36 minutes late. Find the speed of the train and distance of the journey.

ASSESS YOURSELF

1. Find whether the following pair of equations has no solution, unique solution or infinitely many solutions.
 $5x - 8y + 1 = 0$;
 $3x - \frac{24}{5}y + \frac{3}{5} = 0$
2. If the system of equations $6x - 2y = 3$ and $kx - y = 2$ has a unique solution, find k .
3. The measures of two angles of a triangle are in the ratio 5: 3. The measure of the third angle is half the difference of the measure of the above two angles. Find the measure of each angle.

4. Find the value of k for which the pair of linear equations $kx + 3y = k - 2$ and $12x + ky = k$ has no solution.
5. Find the value of k for which the system of equations has no solution.
 $3x - 4y + 7 = 0$, $kx + 3y - 5 = 0$
6. Find the value of k for which the system of equations has a unique solution.
 $x - ky = 2$, $3x + 2y = -5$
7. Determine the value of k for which the following system of equations has no solution:
 $kx + 2y - 1 = 0$, $5x - 3y + 2 = 0$

ASSESS YOURSELF

1. What is the lower limit of the modal class of the following distribution?

Age in years	0-10	10-20	20-30	30-40	40-50	50-60
Number of patients	16	13	6	11	27	18

2. If the mean of the following distribution is 2.6, then the value of y will be?

Variable	1	2	3	4	5
Frequency	4	5	y	1	2

3. The following are the marks of 9 students in a class. Find the median of 21, 24, 27, 30, 32, 34, 35, 38, 48.

4. Find the median of the daily wages of ten workers from the following data:

8, 9, 11, 14, 15, 17, 18, 20, 22, 25

5. Find the mode of the given data: 120, 110, 130, 110, 120, 140, 130, 120, 140, 120

6. Find the mode of the following data:

25, 16, 19, 48, 19, 20, 34, 15, 19, 20, 21, 24, 19, 16, 22, 16, 18, 20, 16, 19.

7. The class marks of a frequency distribution are 6, 10, 14, 18, 22, 26, 30. Find class size.

8. Write the frequency distribution table for the following data:

Marks	No. of students
Below 10	0
Below 20	15
Below 30	20
Below 40	30
Below 50	35
Below 60	40

[CBSE 2011]

9. Calculate mode of the following data:

Marks Obtained	No. of students
0-20	8
20-40	10
40-60	12
60-80	6
80-100	3

[CBSE 2011]

10. Find the median wage of a worker engaged at a construction site whose data are given below:

Wages (in ₹)	Number of workers
3500	12
3800	13
4100	25
4500	17
5500	15
6500	12
7000	6

11. If the mean of the following data is 12, find p .

x	4	8	p	16	20
y	5	3	12	5	4

12. A student noted the number of cars passing through a spot on a road for 100 periods each of 3 minutes and summarised it in the table given below. Find the mode of the data:

Number of cars	Frequency
0-10	7
10-20	14
20-30	13
30-40	12
40-50	20
50-60	11
60-70	15
70-80	8

13. If the mean of the following distribution is 50, find the value of f_1 :

Class	Frequency
0-20	17
20-40	28
40-60	32
60-80	f_1
80-100	19

14. Compute mean of the grouped data:

Income (in Rupees)	No. of workers
200-300	5
300-400	36
400-500	24
500-600	16
600-700	9
700-800	6
800-900	4

23. If the mean of the following frequency distribution is 91, find the missing frequencies (f_1, f_2):

Class	Frequency
0 — 30	12
30 — 60	21
60 — 90	f_1
90 — 120	52
120 — 150	f_2
150 — 180	11
Total	150

24. The median of the following data is 32.5.

Class interval	Frequency
0 — 10	x
10 — 20	5
20 — 30	9
30 — 40	12
40 — 50	y
50 — 60	3
60 — 70	2
Total	40

Find the values of x and y .

25. An incomplete distribution is given below:

Variable	Frequency
10 — 20	12
20 — 30	30
30 — 40	x
40 — 50	65
50 — 60	y
60 — 70	25
70 — 80	18

You are given that the median value is 46 and the total number of items is 230.

(i) Using the median formula and fill up missing frequencies.

(ii) Calculate the A.M. of the completed distribution.

26. The median of the following data is 525.

Class interval	Frequency
0 — 100	2
100 — 200	5
200 — 300	x
300 — 400	12
400 — 500	17
500 — 600	20
600 — 700	y
700 — 800	9
800 — 900	7
900 — 1000	4

Find the values of x and y , if the total frequency is 100.

27. The following distribution gives the daily income of 50 workers of a factory.

Daily income (in ₹)	Number of workers
100 — 120	12
120 — 140	14
140 — 160	8
160 — 180	6
180 — 200	10

Convert the distribution above to a less than type cumulative frequency distribution, and draw its ogive.

28. The A.M. of a set of 50 numbers is 38. If two numbers of the set namely 55 and 45 are discarded, the A.M. of the remaining set of numbers is _____.

29. The median from the table is

Value	7	8	9	10	11	12	13
Frequency	2	1	4	5	6	1	3

(a) 11

(b) 10

(c) 12

(d) 11.5

30. Construction of cumulative frequency table is useful in determining the _____.

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2020-2021

विषय :- सामाजिक विज्ञान :- सारा कार्य साफ व
इतिहास :- पाठ- 2, 3 याद करो और पाठ- 1, 4, 5
(यूरोप में सशस्त्रवाद, भूमंडलीकरण विश्व का पुनर्ना,
औद्योगिकीकरण का युग) के नोट्स तैयार करो।

भूगोल :- पाठ- 1 याद करो व पाठ- 4, 5 के
नोट्स तैयार करो।

राजनीतिक विज्ञान :- पाठ- 1 याद करो व पाठ- 2, 4 के
नोट्स तैयार करो।

अभिव्यक्ति :- पाठ- 1, 2 याद करो व पाठ- 3 के
नोट्स तैयार करो।

परियोजना कार्य :- सामाजिक मुद्दों पर एक
फाइल तैयार करो। (A-4 size sheet)



- हिन्दी :- (1) रचना के आधार पर सुरल,
संयुक्त एवं मिश्रित वाक्यों के पांच-
पाँच उदाहरण लिखो।
- (ii) हिन्दी परियोजना कार्य :- निम्नलिखित संकेत बिंदुओं
के आधार पर परियोजना कार्य तैयार कीजिए :-
- (1) रस :- रस की परिभाषा, स्थायी भेद, रस
के प्रकार, परिभाषा एवं उदाहरण सहित
लिखो।
- (ii) विशासन :- परिभाषा, विशासन निर्माण में सहायक तत्व
विशासन के उद्देश्य तथा हमारे दैनिक
जीवन में उपयोग होने वाली किन्हीं

दो वस्तुओं पर विज्ञापन बनाइए (A-4 Size sheet पर)

* शब्दभाषा - हिन्दी विषय पर निबंध लिखें।

संस्कृत :-> 1. 1 से 100 तक गिनती याद करिए।

- (ii) पाठ-2 अभ्यास सहित याद करिए।
- (iii) व्युत्पन्न एवं विसर्ग संबंध का अभ्यास करिए।
- (iv) परियोजना कार्य :-> नीचे दिए गए किसी एक विषय पर चिह्न सहित परियोजना कार्य तैयार कीजिए।

शुचिपथावरणम्
उत्थवा
सुभाषिताम्

Biology Science :->

- (i) Complete ch-6 life process in your fair notebook and learn it
- (ii) Make a notes on Chapter - our environment
- (iii) Draw the following diagrams in your assignment notebook
 - (i) Human digestive system
 - (ii) Nutrition ~~digestive~~ in Amoeba.
 - (iii) Human respiratory system
 - (iv) structure of human heart
 - (v) Human excretory system
Project working model of lungs.