KOTHARI INTERNATIONAL SCHOOL, NOIDA
HALF YEARLY EXAMINATION, SESSION: 2025-26
GRADE: 8 SUBJECT: MATHEMATICS
SET A (SUBJECTIVE)

DAY & DATE: TUESDAY - SEPTEMBER 23, 2025
MAXIMUM MARKS: 60 TIME ALLOTTED: 2 HOURS 30 MINUTES
NAME: _____ ROLL NO: _____

GENERAL INSTRUCTIONS:

i). This question paper contains 22 questions. All questions are compulsory.
ii). Question Nos.1 to 11 carries 2 marks each.
iii). Questions Nos. 12 to 17 carries 3 marks each.
iv). Questions Nos. 18 to 22 carries 4 marks each
v). Read the question paper carefully and then attempt it.

SECTION B

Q1. Simplify: **(2)**

$$\sqrt{59+\sqrt{16+\sqrt{81}}}$$

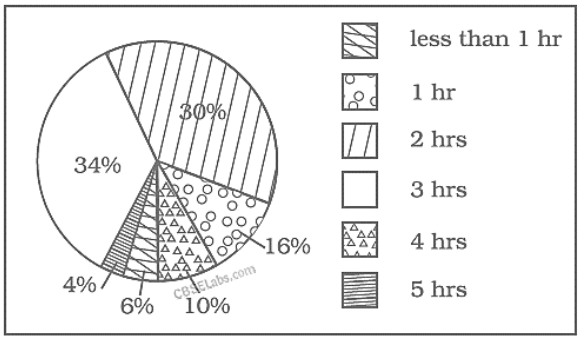
Q2. Subtract $31(1-4m+5n)$ from $41(10n-3m+21)$ **(2)**

Q3. Find x, so that $\left(\frac{2}{9}\right)^3 \times \left(\frac{2}{9}\right)^{-6} = \left(\frac{2}{9}\right)^{2x-1}$ **(2)**

Q4. Solve: $4 - 3(4x + 2) = 3(5 - 2x) + 1$ **(2)**

Q5. Find the sum of the additive inverse and multiplicative inverse of $\frac{17}{-6}$ **(2)**

Q6. Given below is a pie chart showing the time spent by a group of 350 children in different games. Observe it and answer the questions that follow. **(2)**



a.) How many children spent less than one hour playing games?
b.) How many children spent exactly 4 hours playing games?

Q7. What should be subtracted from $2a + 8b + 10$ to get $-3a + 7b + 16$? **(2)**

Q8. Find the Pythagorean triplet whose one member is 18. **(2)**

Q9. Find the measure of each interior angle of a regular octagon. **(2)**

Q10. A rational number x is equal to $\frac{2}{5}$ times the sum of $\frac{34}{7}$ and $\frac{1}{14}$. Find the rational number. **(2)**

Q11. If $\sqrt{784} = 28$, find the value of $\sqrt{7.84} + \sqrt{78400}$ **(2)**

SECTION C

Q12. Evaluate: **(3)**

$$\frac{3^{-5} \times 10^{-5} \times 125}{5^{-7} \times 6^{-5}}$$

Q13. Help Sheetal determine the probability of the following cards from a well-shuffled deck of cards: **(3)**

a.) Drawing a Red Queen
b.) Drawing a King of Spades
c.) Drawing a Red Card

Q14. Four friends had a competition to see how far they could hop on one foot. The table given below shows the distance covered by each: **(3)**

NAME	DISTANCE COVERED (IN KM)
Seema	$\frac{1}{25}$
Nancy	$\frac{1}{32}$
Megha	$\frac{1}{40}$
Sanya	$\frac{1}{20}$

a.) How farther did Sanya hop than Nancy?
b.) Find the total distance covered by both Seema and Megha?
c.) Who hoped farther, Nancy or Megha?

Q15. Find the square root of 0.5184 using the prime factorization method. **(3)**

Q16. If numerator is 2 less than the denominator of a rational number and when 1 is subtracted from numerator and denominator both, the rational number in its simplest form is 1/2. What is the rational number? **(3)**

Q17. ABCD is a parallelogram. What kind of quadrilateral is it if: **(3)**

a.) AC=BD and AC is perpendicular to BD?
b.) AC is perpendicular to BD but is not equal to it?
c.) AC=BD but AC is not perpendicular to BD?

SECTION D

Q18. **(4)**

a.) Express 8^{-4} in the exponential form with the base 2.

b.) Express in standard form**:**

$$\frac{1.5\times10^{6}}{2.5\times10^{-4}}$$

c.) Simplify and give answer in negative exponent:

$$\left[\left(-\frac{3}{2}\right)^{-2}\right]^{-3}$$

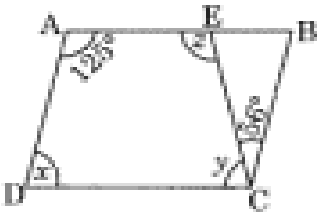
Q19. Raman went to a shop with his wife and saw a beautiful rectangular photo frame. The length and breadth of the frame are 4ab cm and (5a – 2ab) cm. He decided to put it on his drawing room wall. **(4)**

(i) What will be the perimeter of the frame?

(ii) Find the area covered by the frame.

Q20. Find the smallest square number that is divisible by each of the numbers 8,15 and 20. Show the working. **(4)**

Q21. In the given figure, ABCD is a parallelogram. If ∠EAD = 125º and ∠BCE = 66º,find the measures of angles x, y, and z. Also, find the measure of ∠EBC. **(4)**



Q22. The following table shows the favourite subjects of 200 students: **(4)**

SUBJECT	Science	Mathematics	English	Hindi	Social Science
NUMBER OF STUDENTS	40	60	30	50	20

Draw a pie chart to represent this data.