

Class Number

(Total time 2 hours)

① If $T_n = 3n + 5$, find the first 2 terms of the number pattern.

② Turn into binary 52_{ten} .

③ Solve $11000_{two} - 1111_{two}$.

④ Simplify. (i) $\frac{2}{3} + \frac{3}{4}$ (ii) $\frac{4}{5} - \frac{2}{5}$

⑤ A vendor buys a pen at Rs. 20.00 and sells at Rs. 25.00. Find the profit percentage.

⑥ A vendor buys a shirt at Rs. 120 and sells with a 15% profit. Find the selling price.

⑦ If $x = \frac{2}{5}$, Evaluate $10x$.

⑧ Simplify $(x+4)(x+3)$.

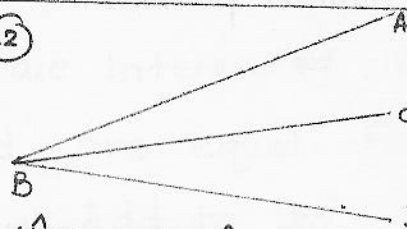
1) Simplify by applying the theories of factorization.

$$21^2 - 12^2$$

10) Factorize $p^2 - 6p - 16$.

11) Factorize $36 - x^2$

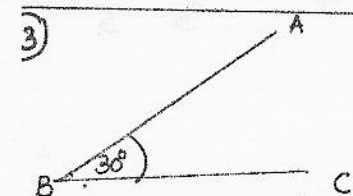
12)



$\angle ABC$ and $\angle CBD$ are adjacent angles. Name the;

(i) Common side

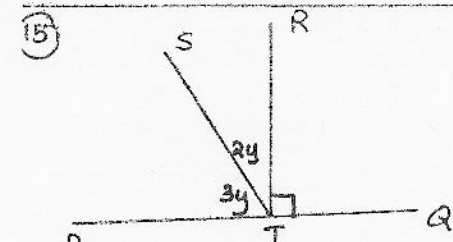
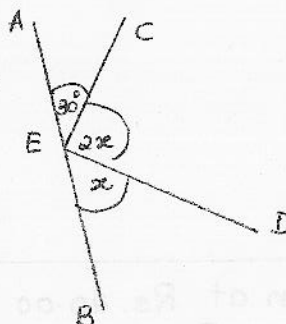
(ii) Common vertex



If $\angle ABC = 30^\circ$, find the value of
(i) the complementary angle

(ii) Supplementary angle

14) Find the value of x (giving reasons) if AB is a straight line.

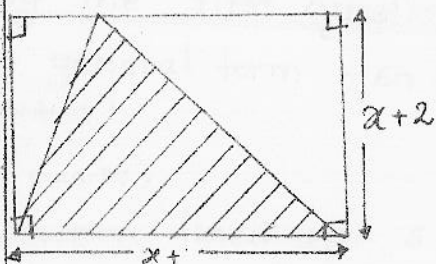


If PQ is a straight line, giving reasons, find the value of y .

16) $16 \div 2$ of $4 \times 3 - 2 + 4$
Simplify.

19) The production cost of a shirt is Rs. 500. It was marked at Rs. 1000. If the vendor wants to offer a discount and also a profit of Rs. 300, what is the discount percentage he should offer?

18) Form an expression to find the area of the unshaded portion

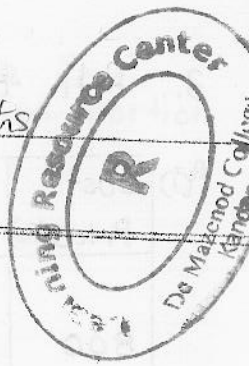


19) Amal and Sajith drank $\frac{1}{2}$ and $\frac{1}{3}$ of a juice bottle. What fraction of the juice left in the bottle?

20) Ruwan studied from 5.00pm to 6.00pm. He took $\frac{1}{2}$ of the time for Science and $\frac{1}{3}$ for history. Find the time he was not studying.

(40 marks)





Answer only 5 questions including the first question.

1. (A) A number pattern has its general term $-6n + 2$.
(i) Find the 7th term. (2 marks)

(ii) Which term is -124 ? (2 marks)

- (B) At a drill display, children were lined up 5 students in the first row, 8 students in the second row, 11 in the third row, 14 in the fourth row and so on.

(i) Find the general term of the pattern the students lined up (2 marks)

(ii) How many students were there in the 8th row? (2 marks)

(iii) Which row had 65 students? (2 marks)

(B)(i) Turn into the base of ten. 1101_{two} . (2 marks)

(ii) Fill the blanks with the correct number.

$$\begin{array}{r}
 110 \square_{\text{two}} \\
 \square 11_{\text{two}} \\
 \hline
 10100_{\text{two}}
 \end{array}$$

(2 marks)

(iii) Continue the pattern. 1100_{two} , 1110_{two} , 1000_{two} , ... (2 marks)

2. (A) Simplify.

(i) $\frac{3}{5} \times \frac{10}{6}$ (2 marks)

(ii) $\frac{4}{6} \div \frac{12}{18}$ (2 marks)

(iii) $3\frac{3}{4} \div [2\frac{1}{2} + 3\frac{1}{4}]$ (2 marks)

- (B) A farmer had okra grown in $\frac{1}{2}$ of his land and $\frac{1}{3}$ of his land, he grew brinjal. Due to a plant disease, $\frac{1}{4}$ of okra and $\frac{1}{2}$ of brinjal plants were withered.

(i) Which fraction of the total land did he grow okra and brinjal? (1 mark)

(ii) Which fraction of the total land was withered due to the disease? (2 marks)

(iii) Which fraction of the total land was harvested? (2 marks)

3. Fill the blanks.

Cost Price (Rs)	Selling Price (Rs)	Profit/Loss (Rs)	Profit/Loss percentage
800	880	3. A (1)	
			10%
300	360	3. A (2)	
300		Loss - Rs. 150	
		3. A (3)	
			50%
3. A (4)	162	Loss Rs 18	
			10%

(4 marks)

(i) When a Shirt is sold at Rs. 4000, a discount of Rs. 500 is offered. Find the discount percentage. (2 marks)

(ii) When an item is sold at Rs. 9200.00, it is already given a discount of 8%. What was the marked price of it? (1 mark)

(iii) When a vehicle is sold, a broker is paid a commission of Rs. 60000 and the owner had to settle with Rs 1140000.

(a) Find the selling price of the vehicle. (1 mark)

(b) What is the commission percentage? (2 marks)

(4) (A) Simplify

(i) $3(x+2)$

(ii) $-(4-x)$

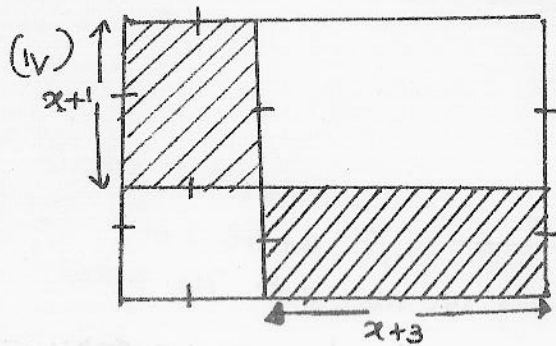
(iii) $-7(3a+3b)$

(iv) $(-3x)(2y-4)$

(4 marks)

2. (i) If $x = -\frac{1}{3}$ and $y = \frac{1}{4}$, evaluate $3x+4y$. (2 marks)

(iii) If $x = 4$, verify $(x+3)(x-2) = x^2 + 3x - 10$



For the shaded portion in the diagram
 (a) form an algebraic expression
 (b) Simplify the algebraic expression.

(5) A. Factorize.

(i) $x^2 - 4x - 3x - 12$

(ii) $y^2 - 7y - 2y + 14$

(iii) $a^2 - 3a - 40$

(6 marks)

B. Factorize (i) $x^2 - 81$

(1 mark)

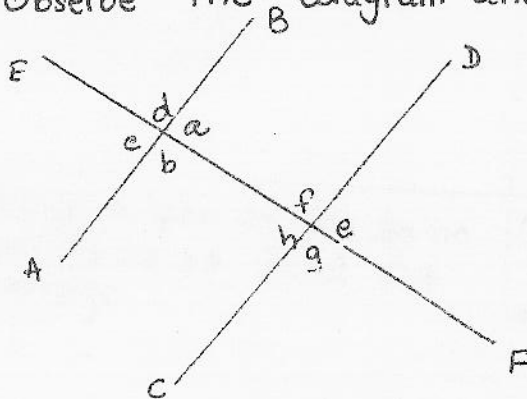
(ii) $3y^2 - 75$

(2 marks)

(iii) $\frac{36x^2}{49} - y^2$

(2 marks)

(6) A. Observe the diagram and answer. (4 marks)



(i) Name the transversal.

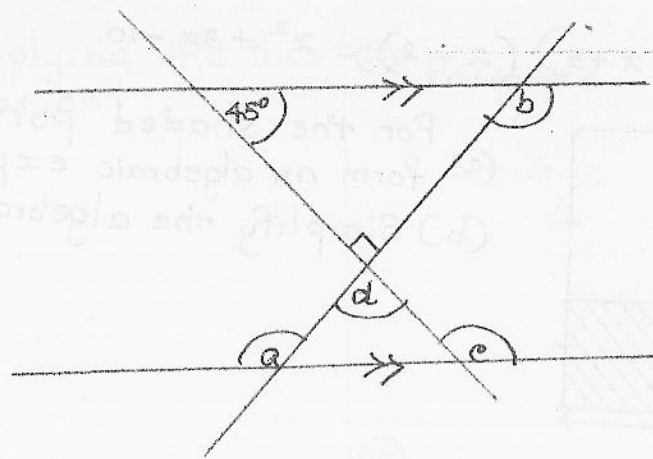
(ii) Name two alternate angles.

(iii) Name two corresponding angles.

(iv) Name two allied angles.

B. Find the value of the angles denoted by English alphabets.
 Give reasons for your answer.





6.B.

When two parallel lines are intersected by a 6B (i) vertical line, corresponding angles formed are equal. Alternate angles are equal. 6B II angles add up to 180° .

(3 marks)