

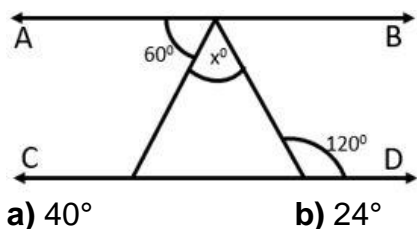
GREENLAWNS SCHOOL, WORLI
First Semester Examination 2024-25
Mathematics

STD: VII
Date: 30/09/2024

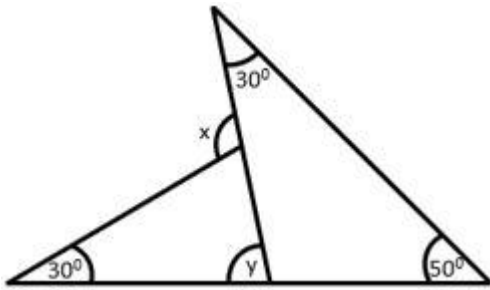
Marks: 80
Time: 2 hr

Question 1 MCQ

- I. Which of the following is a correct statement?
a) $-11 > -9$ b) $-21 > 21$ c) $-15 < -10$ d) $-10 = |10|$
- II. $(1\frac{1}{3} \div 1\frac{1}{2}) \div 1\frac{1}{2} \times \underline{\hspace{2cm}} = 16$
a) $25\frac{5}{6}$ b) 27 c) $29\frac{6}{7}$ d) 30
- III. Add 24.5 and 56.2 then multiply the result into 0.01.
a) 12.5 b) 24 c) 0.807 d) 0.708
- IV. Find the unlike decimals in 0.9, 5.32, 6.45.
a) 0.9 b) 5.32 c) 6.45 d) None of these
- V. What should be added to $-\frac{3}{32}$ to get $\frac{53}{96}$?
a) $\frac{11}{61}$ b) $\frac{31}{48}$ c) $\frac{5}{22}$ d) 0
- VI. $8\frac{5}{6} - 4\frac{3}{8} + 2\frac{3}{12} = \underline{\hspace{2cm}}$.
a) $\frac{161}{42}$ b) $\frac{24}{161}$ c) $\frac{161}{24}$ d) None of the
- VII. Simplify $(-\frac{12}{7} \times -\frac{56}{27}) - (-\frac{8}{45} \times \frac{5}{24})$.
a) $\frac{95}{27}$ b) $-\frac{33}{9}$ c) 0 d) 1
- VIII. $(2^0 + 3^0)^2 \times (5^0 + 7^0)^3 = \underline{\hspace{2cm}}$.
a) 8 b) 16 c) 32 d) 100
- IX. $7 \times 10^5 + 6 \times 10^3 + 2 \times 10^2 + 5 \times 10^0 = \underline{\hspace{2cm}}$.
a) 706025 b) 76205 c) 706205 d) None of these
- X. The sum of a rational number $-1/2$ and its multiplicative inverse is
a) 0 b) 1 c) $-2\frac{1}{2}$ d) -2
- XI. The third proportional to 9 and 12 is _____.
a) 15 b) 16 c) 17 d) 18
- XII. Find the value of 'x' in the below given diagram.



XIII. Find the value of 'x' and 'y' in the below given figure.



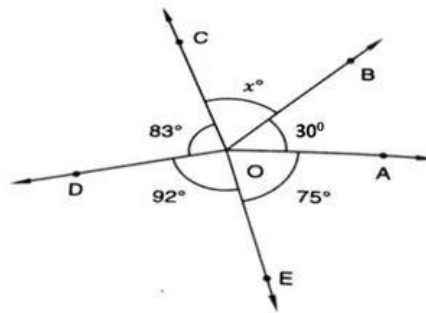
- a)** $x = 110^\circ, y = 80^\circ$ **b)** $x = 80^\circ, y = 110^\circ$ **c)** $x = 100^\circ, y = 70^\circ$ **d)** $x = 70^\circ, y = 100^\circ$

XIV. In a right-angled triangle, the sum of two acute angles is greater than 90° . Mark True / False.
a) True **b)** False

XV. $(-5) \div \{(-4) \div (-6)\} = \{(-5) \div (-4)\} \div (-6)$. Mark True / False.
a) True **b)** False

Question 2

a. Find x in the given figure:



[2]

b. Evaluate $3^8 \times 3^{92} - 3^{12} \times 3^{88}$. [2]

c. If $A : B = 3 : 4$ and $B : C = 8 : 9$, then find $A : C$. [2]

d. Write the prime factorization of **14157** in the exponential form. [2]

e. 120 men had provisions for 200 days. After 5 days, 30 men died due to an epidemic. The remaining food will last for how many days? [2]

f. If $A = \{ 2, 4, 6, 8 \}$ and $B = \{ 6, 8, 10, 12 \}$. Find i. $A \cup B$ ii. $A \cap B$. [2]

g. Let $P = \{\text{letters of SCHOOL}\}$ and $Q = \{\text{letters of FALSE}\}$, then State whether each of the following statement is true or false for the above sets:
 (i) $P \subset Q$
 (ii) $Q \subset P$
 (iii) $P \leftrightarrow Q$ [3]

Question 3

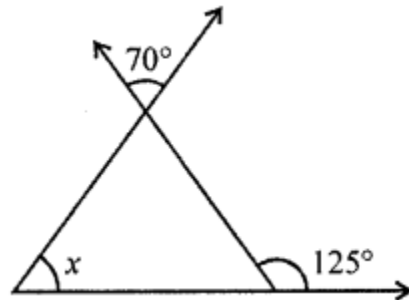
- a. If $\left(-\frac{3}{5}\right)^x = -\frac{27}{125}$, then find the value of x . [2]
- b. In an isosceles triangle, the vertical angle is 15° greater than each of its base angles. Find all the angles of the triangle. [2]
- c. 12 men, working 8 hours a day, complete a piece of work in 10 days. To complete the same work in 8 days, working 8 hours a day, find the number of men required? [2]
- d. If $A = \{1, 2, 3, 4, 5, 6\}$, $B = \{2, 4, 6, 8\}$. Find $A - B$ and $B - A$. [2]
- e. Represent $-9/5$ and $3/5$ on the number line. [2]

Question 4

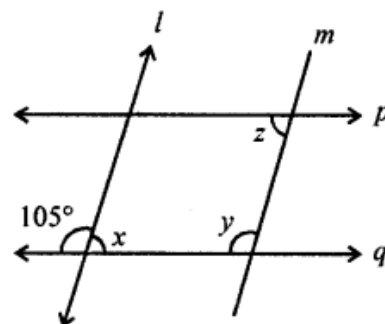
- a. A train covers 353.6 km in 3.2 hours. What is the distance covered by the train in 1 hour? [2]
- b. Divide 120 into two parts, so that the greater part is 5 times the smaller part. What is the greater part? [2]
- c. Write each of the sets in ROSTER forms and write their cardinal numbers:
 $P = \{\text{letters of the word EXAMINATION}\}$ and $Q = \{x \mid x = 2n + 1, n < 5, n \in \mathbb{N}\}$ [3]
- d. Simplify: $4 + \frac{3}{5} \{[-10 \times (55 - |16 - 3|)] \div (-6)\}$ [3]

Question 5

- a. Two angles are supplementary. One of them is 60° more than the other, find both the angles. [2]
- b. In the given figure, find the value of x . [2]



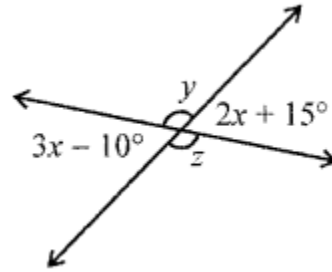
- c. In the figure given below, $l \parallel m$ and $p \parallel q$. Find the values of x , y and z . [3]



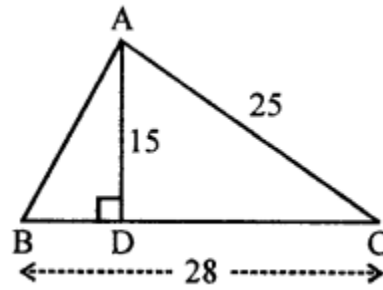
- d. Classify the following sets into the finite set, infinite set the empty set. In the case of a (non-empty) finite set, mention the cardinal number. [3]
- (i) The set of even prime numbers.
 - (ii) {multiples of 9}
 - (iii) $\{x : x \text{ is a prime factor of } 84\}$
 - (iv) $\{x : 2x + 5 = 1, x \in \mathbb{N}\}$
 - (v) $\{x : x \text{ is a month of a year having less than 30 days}\}$
 - (vi) $\{x \mid x \text{ is a month of a leap year having 28 days}\}$

Question 6

- a. The given diagram shows two intersecting straight lines. Find the values of x , y and z . [3]



- b. In the given figure, all measurements are in centimeters. If AD is perpendicular to BC , find the length of AB . [3]



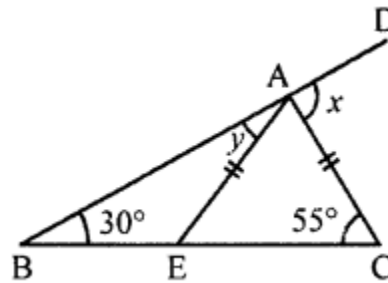
- c. Simplify the following: [4]

(i) $\left(\frac{-1}{2}\right)^5 \times 2^6 \times \left(\frac{3}{4}\right)^3$

(ii) $\left[\left(\frac{-3}{4}\right)^3 - \left(\frac{-5}{2}\right)^3\right] \times \left(-\frac{2}{3}\right)^4$

Question 7

- a. Find the values of x and y in the adjacent figures: [3]



- b. A can do a piece of work in 25 days and B can finish it in 20 days. They work together for 5 days and then A leaves. In how many days will B finish the remaining work? [3]

- c. Heights of Anshul, Ankita and Dhruv are 1.04 m, 1.30 m and 91 cm respectively. Divide 100 sweets among them in the ratio of their heights. [4]
