

GREENLAWNS HIGH SCHOOL

First Terminal Examination

STD 10

Mathematics

40 Mks

Note 1) Attempt all questions

2) Show all Working

3) Answers to be written on composition sheets

Q1)

- a) Solve the following Quadratic Equation and express your answer correct to 2 significant figures. (3)

$$2x^2 - x - 37 = 0$$

- b) If the third term of an AP is 17 and the twentieth term is 119, find the nineteenth term. (3)

- c) Mrs. Shah has a recurring deposit account in a particular bank. She deposits Rs 3000 every month for 2 years. Calculate the rate paid by the bank if she receives Rs 88500 at the time of maturity. (4)

Q2)

- a) A wholesaler sells an article whose listed price is Rs 80,000 to a dealer at a discount of 10%. The dealer sells that article to a customer at Rs 1,80,000. If GST is 18% calculate the tax paid by the dealer to the Central Government. (3)

- b) Solve the following inequation and graph the solution on a number line (3)

$$2x - 2 < x + 2 \leq 3x + 5, x \in R$$

- c) The area of a right angled triangle is 1000 cm². If the base of the triangle exceeds the altitude By 10cm, calculate the lengths of the base and altitude of the triangle. (4)

Q3)

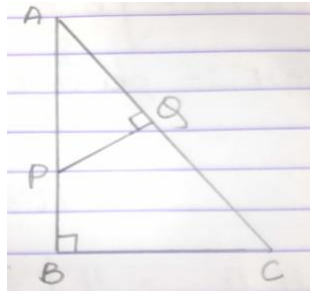
- a) If $\frac{a}{b} = \frac{c}{d}$, then prove that $\sqrt{\frac{a^8 + c^8}{b^8 + d^8}} = \frac{pa^4 + qc^4}{pb^4 + qd^4}$ (3)

- b) If $A = \begin{pmatrix} -3 & 2 \\ 1 & 4 \end{pmatrix}$ and $B = \begin{pmatrix} 2 & 0 \\ -1 & 6 \end{pmatrix}$ find $4A - 3B$ (3)

- c) Using Factor Theorem show that $x+3$ is a factor of $2x^3 - 3x^2 - 17x + 30$. Hence factorise the given polynomial completely. (4)

Q4)

- a) In the figure drawn below $AB = 15\text{cm}$, $AC = 17\text{cm}$ and $PQ = 4\text{cm}$, find the length of AQ (3)



- b) The first term of an AP is 8 and the sum of the first 14 terms is 840, find the common difference (3)

- c) If the $Q = \begin{pmatrix} 2 & 1 \\ 1 & 3 \end{pmatrix}$ and $R = \begin{pmatrix} -4 & -7 \end{pmatrix}$ find matrix P such that $P \times Q = R$ (4)