GREENLAWNS HIGH SCHOOL
TERMINAL EXAMINATION 2021

SUBJECT: MATHEMATICS   CLASS: IX
TIME: MARKS: 40

Please note: 1. All answers must be written on composition sheets.
   2. On each side of the composition sheet mention your name,
      roll no, std and div.
   3. The answer sheets must be converted into a clear pdf. Keep the pdf in
original colour and upload on teams.
   4. Rename your pdf as your 'Roll no name Math TE'
   <mark>(Example: 50 Hari Kumar Math TE)</mark>

Q1. A) If $\frac{\sqrt{7}-1}{\sqrt{7}+1} - \frac{\sqrt{7}+1}{\sqrt{7}-1} = a + b\sqrt{7}$ find the value of 'a' and 'b'.   (4)

B) In the figure given below, PQ = PR and $\angle MRQ = \angle MQR$. Prove that $\triangle$PQM $\cong \triangle$PRM. Also prove $\angle$MPR = $\angle$MPQ.   (3)
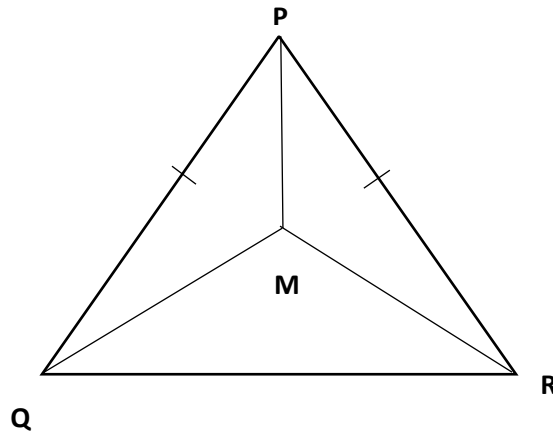
C) Determine the value of $(8x)^x$ if $9^{x+2} = 240 + 9^x$.   (3)

Q2A) 'A' and 'B' borrowed Rs. 60,000 and Rs. 50,000 respectively for a period of 3 years. 'A' paid a simple interest at the rate of 10% p.a. while 'B' paid compound interest at the rate of 10% p.a. compounded annually. Who paid more interest and by how much?   (4)

B) If $x + \frac{1}{x} = 6$, find the value of $x - \frac{1}{x}$ (3)

C) If Vivek walks for 2 hours and then cycles for 1 hour, he covers 17kms. If he walks for 1 hour and then cycles for 2 hours, still at the same speed, he covers 22kms. What are his speeds of walking and cycling? (3)

Q3A) What sum of money will amount to RS. 7,290 in two years at the rate of 8% p.a. compounded annually? (4)

B) Represent $\sqrt{5}$ on a number line using ruler and compass only. (3)

C) In the figure given below, PS = SR, PS = 20cm and PQ = 12cm. Find the length of QR. (3)
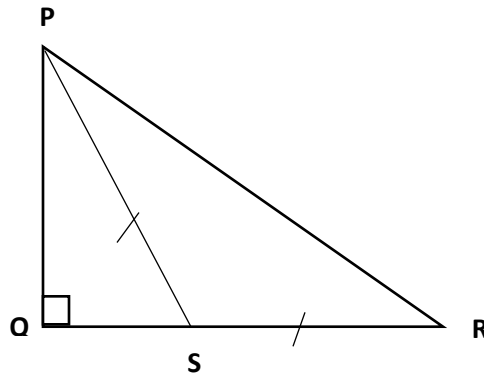
Q4A) Solve the given equation graphically.

Also write the point of intersection of these two lines.

3x – y = 7 and 2x+5y+1=0 (4)

B) Find the co-ordinates of points on the x-axis which are at a distance of 5 units from the point (6,-3). (3)

C) Factorise: $(2a - 3b)^2 - 7(2a - 3b) - 30$ (3)