

- (b) The distance (in km) of 40 engineers from their residence to place of work were found as follows: [3]

| | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|
| 5 | 3 | 10 | 20 | 25 | 11 | 13 | 7 | 12 | 31 |
| 2 | 19 | 10 | 12 | 17 | 18 | 11 | 32 | 17 | 16 |
| 3 | 7 | 9 | 7 | 8 | 3 | 5 | 12 | 15 | 18 |
| 12 | 12 | 14 | 2 | 9 | 6 | 15 | 15 | 7 | 6 |

Construct a grouped frequency distribution table with class size 5 for the data given above taking the first interval as 0 - 5 (5 not included). What main feature do you observe from this tabular representation?

- (c) Solve: $\log_x(8x-3) - \log_x 4 = 2$ [3]

Q. 10.

- (a) Prove that $\sqrt{5}$ is an irrational number. [4]

- (b) If $\tan(\theta_1 + \theta_2) = \frac{\tan\theta_1 + \tan\theta_2}{1 - \tan\theta_1 \tan\theta_2}$, find the value of $(\theta_1 + \theta_2)$ given that $\tan\theta_1 = \frac{1}{2}$ and

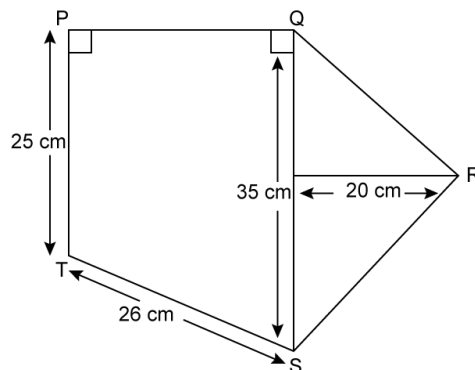
$$\tan\theta_2 = \frac{1}{3}. \quad [3]$$

- (c) If $\frac{x^2+1}{x} = 4$, find the value of $2x^3 + \frac{2}{x^3}$. [3]

Q. 11.

- (a) Factorise: $4a^3b - 44a^2b + 112b$ [3]

- (b) Find the area of following figure: [3]



- (c) In ΔABC , $AB = AC = x$, $BC = 20$ cm and the area of the triangle is 250 cm^2 . Find x . [4]