



MATHS

BOOKS - SELINA MATHS (ENGLISH)

REVISION PAPER -1

Section A

1. Rita went to a shop to purchase an article A with MRP = rupees 850 and rate of GST = 12% How much will Rita pay for this article?

If instead of article A , Rita purchases some other article B with MRP = rupees 1,200 and rate of GST = 18% find how much extra money will she pay to the shopkeeper?



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2. A man wants to buy 124 shares available at rupees 66 (par value = rupees 50)

(i) How much should he invest?

(ii) if the dividend is 7.5 % what will be his annual income?

(iii) If he wants to increase income by rupees 600.

how many extra shares should he buy ?



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3. If $(x^2 - x - 2)$ is a factor of $x^3 + 3x^2 + ax + b$ calculate the values of a and b . Write all the factor of the given expression.



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4. Find the sum of first 14 terms of the sequence
-3,3,9,15,.....`



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5. The internal and external diameters of a hollow hemispherical vessels are 24 cm and 25 cm respectively . The cost to paints 1cm^2 of the surface of the vessels is Rs. 5 . Find the total cost to paint the vessel all over (use $\pi = 3.14$)



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6. Find the ratio in which the line $2x + 3y - 5 = 0$ divides the line segment joining

the points (8,-9) and (2,1) Also. Find the coordinates of the point of divisions



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7. The given figure shows a circle (with centre O) inscribed in a right - angled triangle ABC with $\angle B = 90^\circ$, $AB = 8\text{cm}$ and $BC = 6\text{cm}$ Find.

(i) the radius of the circle.

(ii) the area of the shaded portion i.e. portion enclosed between the circle and the triangle .



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8. Find the median of the following data: 19, 25, 59, 48, 35, 31, 30, 32, 51.

If 25 is replaced by 52, what will be the new median.



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9. Mahima has a recurring deposit account in a bank for 3 years at 8 % P.a. if she gets rupees 3,996 as interest at the time of maturity of the scheme, find :

the monthly instalment

(ii) the maturity amount.



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10. IF $\sec \theta \sin(36^\circ + \theta) = 1$. Find the value of θ so that θ and $36^\circ + \theta$ are acute angles.



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11. Find θ , if $\sin 5\theta = \cos 4\theta$: where 5θ and 4θ are acute angles.



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12. Points $(4,0)$ and $(-3,0)$ are invariant points under reflection in line L_1 , point $(0,5)$ and $(0,-2)$ are invariant under reflection in line L_2 .

Name and write the equation of lines L_1 and L_2 .



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13. Points $(4,0)$ and $(-3,0)$ are invariant points under reflection in line L_1 , point $(0,5)$ and $(0,-2)$ are invariant under reflection in line L_2 .

Write P' . The reflection of

$P(6, -8)$ in L_1 and P'' the image of P in L_2 .



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14. Points $(4,0)$ and $(-3,0)$ are invariant points under reflection in line L_1 , point $(0,5)$ and $(0,-2)$ are invariant under reflection in line L_2 .

Name and write the equation of lines L_1 and L_2 .



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15. Examine, If two coins are tossed at the same time, there are 3 possible outcomes two heads, two tails, or one of each. Therefore, for each outcome, the probability of occurrence is $1/3$.



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16. Which of the following arguments are correct and which are incorrect ? Give reason if incorrect.

If a dice is thrown , there are two possible outcomes :- an odd numbers or an even

number. Therefore the probability of an odd number is $\frac{1}{2}$.



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Section B

1. A cone of radius 4 cm is divided into two parts by drawing a plane through the mid-point of its axis and parallel to its base. Compare the volumes of the two parts.



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2. If $P = \begin{bmatrix} 6 & -2 \\ 4 & -6 \end{bmatrix}$ and $Q = \begin{bmatrix} 5 & 3 \\ 2 & 0 \end{bmatrix}$ find the matrix M such that $2Q - 3P - 3M = 0$



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3. For the following sequence in G.P. find the sum of infinite terms.

$$\frac{\sqrt{2} + 1}{\sqrt{2} - 1} + \frac{1}{2 - \sqrt{2}} + \frac{1}{2} + \dots\dots\dots$$



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4. The radius and height of a cone are in the ratio 3: 4 If its volume is 301.44 cm^3 find : (1) its radius
(ii) its slant height.



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5. Given $P = \{x : 5 < 2x - 1 \leq 11, x \in R\}$ and

$Q = \{x : -1 \leq 3 + 4x < 23, x \in I\}$

where $R = \{\text{real number}\}$ and $I = \{\text{integers}\}$.



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6. A solid cylinder has diameter 28 cm and height 24 cm . A conical cavity of the same diameter and the same height is drilled out from this solid. Find the whole surfaces area of remaining solid.



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7. Find the length of canvas, 2m in width . Required to make a conical tent, 12 m in diameter and 12.6 m in slant height . Also find the cost of canvas at the rate of rupees 112.50 per metre sq.



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8. P and Q are two points on the opposite sides of a 90 m high tower AB .The base B, of the tower AB , and points P and Q as observed from top A of tower AB are 60° and 30° respectively. Find correct to the nearest .the distance between P and Q.



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9. The lower window of a house is at a height of 2m above the ground and its upper window is 4m

vertically above the tower window. At certain instant the angles of elevation of a balloon from these windows are observed to be 60° and 30° , respectively. Find the height of the balloon above the ground.

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10. In the given figure , CM and RN are respectively the median of triangles ABC and PQR



IF ΔABC is similar to ΔPQR , prove that

$$(i) \Delta AMC \sim \Delta PNR$$

$$(ii) \frac{CM}{RN} = \frac{AB}{PQ} \text{ and}$$

$$(iii) \Delta CMB \sim \Delta RNQ$$



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11. In the given figure , $DE \parallel BC$ and

$AD : AB = 2 : 5$ Find :

$$(ii) \frac{\text{area of } \Delta ADE}{\text{area of } \Delta ABC} \\ \frac{\text{area of } \Delta ABC}{\text{area of trapezium DBCE}}$$



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12. A man holds 800 shares of rupees 100 each of a company paying 7.5% dividend semi-annually.

Calculate his annual yield.



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13. A man holds 800 shares of rupees 100 each of a company paying 7.5% dividend semi-annually.

If he had bought these shares at 40% premium.

What percentage return does he get on his investment?



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14. Two customers A and B are visiting a particular shop in the same week (Tuesday to Saturday). Each is equally likely to visit the shop on any day as on another day. What is the probability that both will visit the shop on:
the same day?



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15. Two customers A and B are visiting a particular shop in the same week (Tuesday to Saturday).

Each is equally likely to visit the shop on any day as on another day. What is the probability that both will visit the shop on consecutive days?



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16. Two customers A and B are visiting a particular shop in the same week (Tuesday to Saturday). Each is equally likely to visit the shop on any day as on another day. What is the probability that both will visit the shop on different days

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17. Prove that :
$$\frac{\cos^2 A + \tan^2 A - 1}{\sin^2 A} = \tan^2 A.$$

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18. A solid consisting of a right circular cone, standing on a hemisphere, is placed upright, in a right circular cylinder, full of water, and touches the bottom. Find the volume of water left in the cylinder, having given that the radius of the cylinder is 3 cm and its height is 6 cm, the radius

of the hemisphere is 2 cm and the height of the cone is 4 cm. Give your answer correct to the nearest centimetre

(Take $\pi = 3\frac{1}{7}$)



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19. Construct an angle $ABC = 45^\circ$. Mark a point P on BC such that $BP = 4-8$ cm. Construct a circle to touch AB at B and also to pass through P.



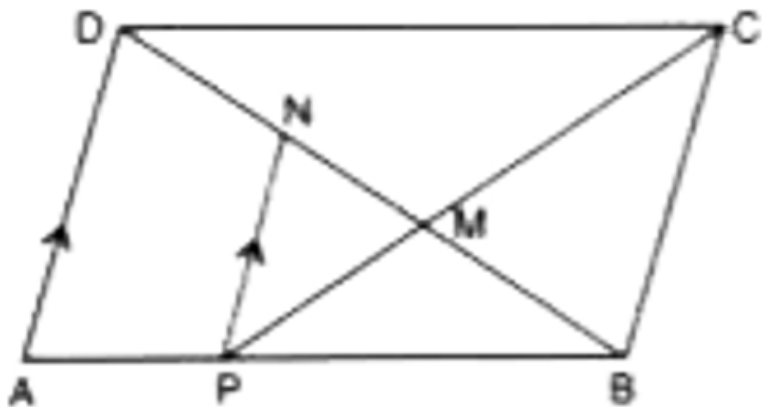
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20. In the given figure, ABCD is a parallelogram and $AP:PB = 3:5$. Calculate:

(i) area (ΔPBN): area (trapezium APND)

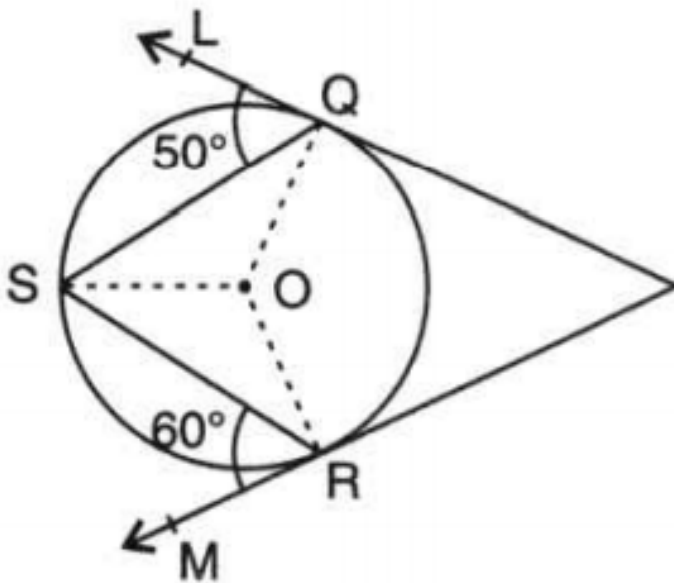
(ii)

$PN:BC$ and area (ΔPMN): area (ΔBMC)



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21. In the given figure, PQL and PRM are two tangents to the circle with centre O at the point Q and R respectively. If S is a point on the circle such that angle SQL = 50° and angle SRM = 60° . Find the reflex angle QOR.



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22. If the mid-point of the line segment joining the points $A(3, 4)$, $B(k, 6)$ is $P(x, y)$ and $x + y - 10 = 0$, find the value of k .



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23. A conical tent is to accommodate 11 persons. Each person must have 4 sq. m of the space on the ground and 20 cubic metre of air to breath. Find the height of the cone.



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24. Find acute angles A and B when

$$2 \sin(A + B) = \sqrt{3} \text{ and } 2 \cos(A - B) = \sqrt{3}$$



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25. ABCD is a rhombus. The co-ordinates of vertices B and D are $(4,7)$ and $(-2,1)$ respectively .

Find the equations of AC.



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