



MATHS

BOOKS - SELINA MATHS (ENGLISH)

REVISION PAPER -3

Section A

1. A man invested Rs 9,000 in 3% (Rs 100) shares at a discount of 10%. He sold all the shares at the rate of Rs 95 each and invested the proceeds in 4% (Rs 50) shares at par. Find the change in his income.



Watch Video Solution

2. If $x = \frac{12mn}{m+n}$, find the value of

$$\frac{x+6m}{x-6m} + \frac{x+6n}{x-6n}$$

[Watch Video Solution](#)

3. Find the sum of the terms of the sequence:

$$5 + 8 + 11 + \dots + 68.$$

[Watch Video Solution](#)

4. Use the factor theorem to factorize

$$x^3 + x^2 - 4x - 4 \text{ completely.}$$



[Watch Video Solution](#)

5. A dice is thrown two times and the total score in two throws is noted. Find the probability that the total score is :

an even number



[Watch Video Solution](#)

6. A dice is thrown two times and the total score in two throws is noted. Find the probability that the total score is :

6





[Watch Video Solution](#)

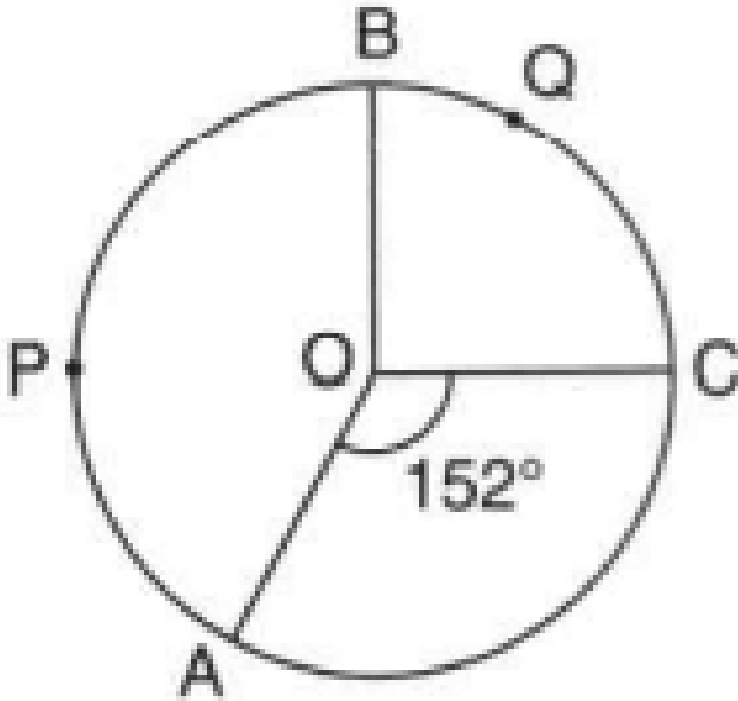
7. A dice is thrown two times and the total score in two throws is noted. Find the probability that the total score is :
at least 6.



[Watch Video Solution](#)

8. In the given figure, lengths of arcs APB and BQC are in the ratio 5:3 and angle $AOC = 152^\circ$, find angle

ACB and angle BAC.



[Watch Video Solution](#)

9. A cumulative deposit account of monthly instalment of 3,600 at 9% p.a. simple interest earns an interest of 17,982. Find the number of instalments paid.



[Watch Video Solution](#)

10. A cylinder vessel of diameter 14cm and height 42cm is fixed symmetrically inside a similar vessel of diameter 16cm and height 42cm. The total space between the two vessels is filled with cork dust for heat insulation purposes. How many cubic centimetres of cork dust will be required?



[Watch Video Solution](#)

11. On a graph paper plot the triangle ABC whose vertices are at points A(5, 4), B(7,5) and C(-3, 6). On the

same graph, draw the image of the triangle ABC under reflection in the line $y = 3$. Mark any two points on the graph paper which are invariant under this reflection. Also, write the co-ordinates of points marked.

 [View Text Solution](#)

12. Prove that

$$\frac{\sin A}{\sin(90^\circ - A)} + \frac{\cos A}{\cos(90^\circ - A)} = \sec A \csc A.$$

 [Watch Video Solution](#)

13. Find the ratio in which the two co-ordinate axes divide the line segment joining the point

$(-2, 5)$ and $(1, -9)$.



[Watch Video Solution](#)

14. Use short-cut method to find the mean of monthly wages of a certain number of workers:

Monthly wages (in ₹)	90-110	110-130	130-150	150-170	170-190
No. of workers	4	6	4	8	18



[Watch Video Solution](#)

15. Use shortcut method to find the mean of monthly wages of a certain number of workers:

Monthly wages (in ₹)	90-110	110-130	130-150	150-170	170-190
No. of workers	4	6	4	8	18

Find the new mean, when:

the monthly wage of each worker is increased by 30% ,



[Watch Video Solution](#)

16. Use shortcut method to find the mean of monthly wages of a certain number of workers:

Monthly wages (in ₹)	90-110	110-130	130-150	150-170	170-190
No. of workers	4	6	4	8	18

Find the new mean, when:

the number of workers in each category is halved.



[Watch Video Solution](#)

17. use shortcut method to find the mean of monthly wages of a certain number of workers:

Monthly wages (in ₹)	90-110	110-130	130-150	150-170	170-190
No. of workers	4	6	4	8	18

Find the new mean, when:

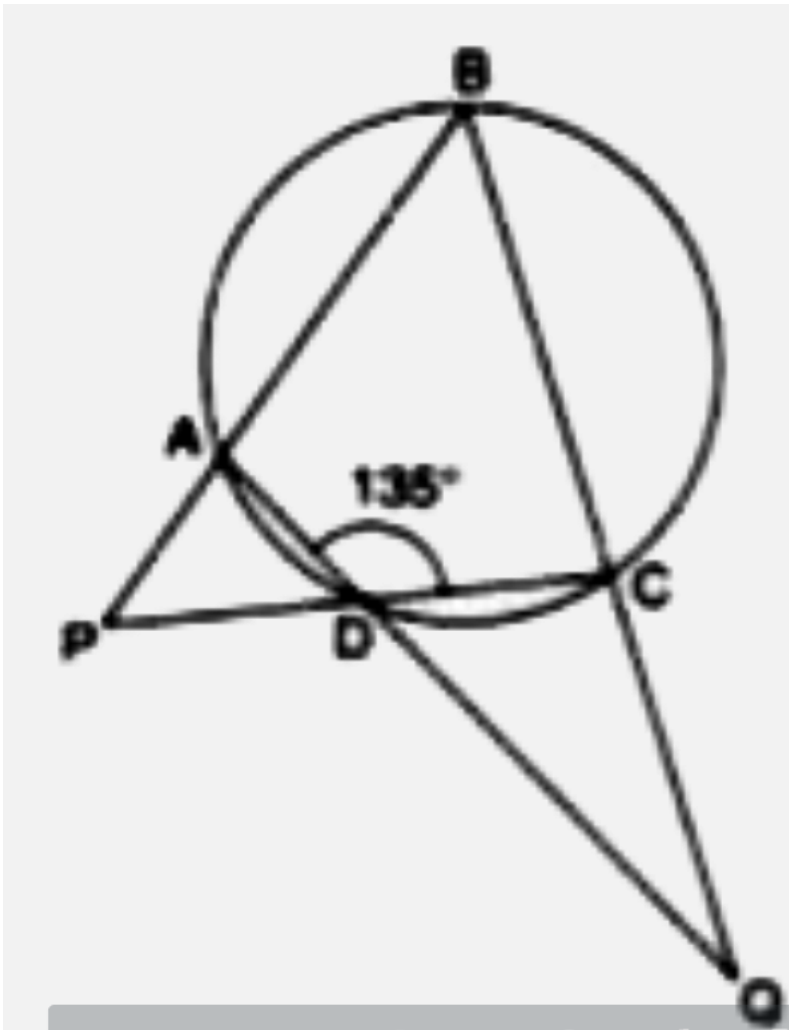
the number of workers in each category is doubled and the monthly wage in each category is decreased by 20% .



[Watch Video Solution](#)

Section B

1. ABCD is a cyclic quadrilateral with $\angle ADC = 135^\circ$. Sides BA and CD produced meet at point P, sides AD and BC produced meet at point Q. If $\angle P : \angle Q = 2 : 1$, find angles P and Q.





[Watch Video Solution](#)

2. A right circular cone is 3.6 cm high and radius of its base is 1.6 cm. It is melted and recast into a right circular cone with radius of its base as 1.2 cm. Find its height.



[Watch Video Solution](#)

3. In GP , 2, 6, 18, 54,13122, the product of 3^{rd} term from the beginning and 3^{rd} term from the last is 26244. Show It.



[Watch Video Solution](#)

4. For the inter-state supply of the following goods/services, find the amount of bill:

MRP (in ₹)	2,500	3,000	4,000	5,000
GST%	12	18	5	12
Discount%	20	30	25	40



[Watch Video Solution](#)

5. Is the line through $(-2, 3)$ and $(4, 1)$ perpendicular to the line $3x = y + 1$? Does the line $3x = y + 1$ bisect the join of $(-2, 3)$ and $(4, 1)$?



[Watch Video Solution](#)

6. If the roots of the equation $(b - c)x^2 + (c - a)x + (a - b) = 0$ are equal, then prove that $2b = a + c$.



[Watch Video Solution](#)

7. In a positive fraction, the denominator is greater than the numerator by 3, If 1 is subtracted from both the numerator and the denominator, the fraction is decreased by $\frac{1}{14}$. Find the fraction.



[Watch Video Solution](#)

8. Solve :

(i) $(x^2 - x)^2 + 5(x^2 - x) + 4 = 0$

(ii) $(x^2 - 3x)^2 - 16(x^2 - 3x) - 36 = 0$



Watch Video Solution

9. If -5 is a root of the quadratic equation $2x^2 + px - 15 = 0$ and the quadratic equation $p(x^2 + x) + k = 0$ has equal roots, find the value of k .



Watch Video Solution

10. There are three containers of equal capacity and all are completely filled with mixtures of acid and water in different ratios. The ratio of acid to water in the first container is 2 : 3, in the second container the ratio is 3:7 and in the third container it is 4:11. If the mixtures of all the three containers are mixed together, what will be the ratio of acid to water in it?

A. question 8

B.

C.

D.

Answer: 2: 61



[Watch Video Solution](#)

11. A straight line passes through the points $A(-5, 2)$ and $B(3, -6)$. It intersects the co-ordinate axes at points C and D . Find :

the equation of AB .



[Watch Video Solution](#)

12. A straight line passes through the points $A(-5, 2)$ and $B(3, 6)$. It intersects the co-ordinate axes at points C and D . M is a point on AB which divides CD in the ratio

1: 2. Find :

the co-ordinates of points C and D.



[Watch Video Solution](#)

13. A straight line passes through the points $A(-5, 2)$ and $B(3,6)$. It intersects the co-ordinate axes at points C and D . M is a point on AB which divides CD in the ratio

1: 2. Find :

the co-ordinates of point M.



[Watch Video Solution](#)

14. If $\frac{7a + 8b}{7c + 8d} = \frac{7a - 8b}{7c - 8d}$, prove that :

$$a : b = c : d$$



Watch Video Solution

15. If $\frac{7a + 8b}{7c + 8d} = \frac{7a - 8b}{7c - 8d}$, prove that :

(i) $a : b = c : d$

(ii) $\frac{4a - 5b}{4c - 5d} = \frac{3a + 4b}{3c + 4d}$



Watch Video Solution

16. Calculate the ratio in which the line joining $A(5, 6)$ and $B(-3, 4)$ is divided by $x = 2$. Also, find

the point of intersection.



Watch Video Solution

17. The speed of a boat in still water is 15 km/hr. It can go 30 km upstream and return downstream to the original point in 4 hours 30 minutes. Find the speed of the stream.



Watch Video Solution

18. Prove that :

$$\sin A(1 + \tan A) + \cos A(1 + \cot A) = \sec A + \operatorname{cosec} A.$$



Watch Video Solution

19. If $x \in W$, find the solution set of

$$\frac{3}{5}x - \frac{2x - 1}{3} > 1.$$

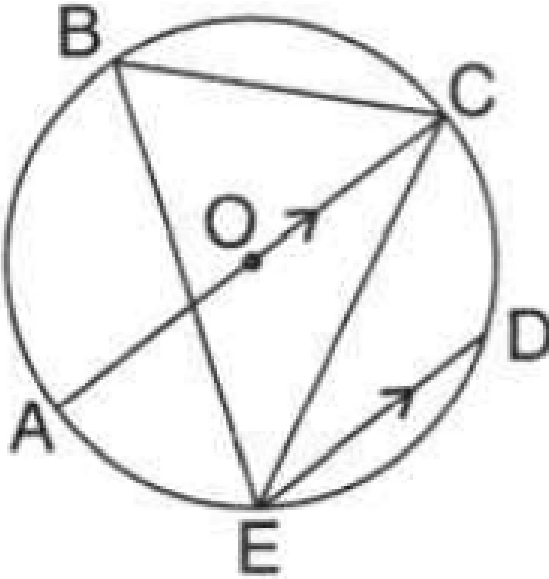


[Watch Video Solution](#)

20. The figure alongside shows a circle with centre O .

Chord ED is parallel to diameter AC and angle

$CBE = 65^\circ$. Find angle CED.



[Watch Video Solution](#)

21. The sum of 3^{rd} and 11^{th} terms of an A.P. is 34. Find the sum of its 13 terms.

[Watch Video Solution](#)

22. Sum of the first p , q and r terms of an A.P are a , b and c , respectively. Prove that

$$\frac{a}{p}(q - r) + \frac{b}{q}(r - p) + \frac{c}{r}(p - q) = 0$$



Watch Video Solution