



MATHS

BOOKS - SELINA MATHS (ENGLISH)

SPECIMEN QUESTION PAPER

Questions Section A

1. If matrix A is of order 3×2 and matrix B is of order 2×2 then the matrix AB is of order:

A. 3×2

B. 3×1

C. 2×3

D. 1×3

Answer: A



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2. The percentage share of SGST of total GST for an Intra-State sale of an article is:

A. 25 %

B. 50 %

C. 75 %

D. 100 %

Answer: B



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3. The mean proportion between 9 and 16 is:

A. 25

B. 144

C. 7

D. 12

Answer: D



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4. A man deposited Rs.500 per month for 6 months and received Rs.3300 as the maturity value. The interest received by him is:

A. 1950

B. 300

C. 2800

D. none of these

Answer: B



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5. The first three terms of an arithmetic progression (A. P.) are 1, 9, 17, then the next two terms are:

A. 25 and 35

B. 27 and 37

C. 25 and 33

D. none of these

Answer: C



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6. If $\triangle ABC \sim \triangle QRP$ then the corresponding proportional sides are:

A. $\frac{AB}{QR} = \frac{BC}{RP}$

B. $\frac{AC}{QR} = \frac{BC}{RP}$

C. $\frac{AB}{QR} = \frac{BC}{QP}$

D. $\frac{AB}{PQ} = \frac{BC}{RP}$

Answer: A



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7. If $x \in w$, then the solution set of the inequation $-x > -7$, is:

A. {8,9, 10 ...}

B. {0, 1, 2, 3, 4,5,6}

C. {0, 1, 2, 3 ...}

D. {-8, -9,- 10...}

Answer: B



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8. The roots of the quadratic equation

$4x^2 - 7x + 2 = 0$ are 1.390, 0.359. The roots

correct to 2 significant figures are:

A. 1.39 and 0.36

B. 1.3 and 0.35

C. 1.4 and 0.36

D. 1.390 and 0.360

Answer: C



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9. 1, 5,3, x and 8 are in proportion, then x is equal to: 1.

A. 6

B. 4

C. 4.5

D. 16

Answer: B



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10. If a polynomial $2x^2 - 7x - 1$ is divided by $(x + 3)$, then the remainder is:

A. -4

B. 38

C. -3

D. 2

Answer: B



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11. If 73 is the n^{th} term of the arithmetic progression 3, 8, 13, 18 ..., then 'n' is:

A. 13

B. 14

C. 15

D. 16

Answer: C



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12. The roots of the quadratic equation

$x^2 + 2x + 1 = 0$ are:

- A. Real and distinct
- B. Real and equal
- C. Distinct
- D. Not real/ imaginary

Answer: B



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13. Which of the following statement is not true?

- A. All identity matrices are square matrix
- B. All null matrices are square matrix
- C. For a square matrix number of rows is equal to the number of columns
- D. A square matrix all of whose elements except those in the leading diagonal are zero is the diagonal matrix

Answer: B



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14. If $(x - 2)$ is a factor of the polynomial $x^3 + 2x^2 - 13x + k$, then 'k' is equal to

A. -10

B. 26

C. -26

D. 10

Answer: D



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Questions Section B

1. A man deposited Rs. 1200 in a recurring deposit account for 1 year at 5% per annum simple interest. The interest earned by him on maturity is:

A. 14790

B. 390

C. 4680

D. 780

Answer: D



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2. If $x^2 - 4$ is a factor of polynomial $x^3 + x^2 - 4x - 4$, then its factors are:

A. $(x - 2)(x + 2)(x + 1)$

B. $(x - 2)(x + 2)(x - 1)$

C. $(x - 2)(x - 2)(x + 1)$

D. $(x - 2)(x - 2)(x - 1)$

Answer: A



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3. The solution set for the linear inequation

$$-8 \leq x - 7 < -4, x \in I \text{ is:}$$

A. $\{x : x \in R, -1 \leq x < 3\}$

B. $\{0, 1, 2, 3\}$

C. $\{-1, 0, 1, 2, 3\}$

D. $\{-1, 0, 1, 2\}$

Answer: D



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4. If $\frac{5a}{7b} = \frac{4c}{3d}$ then by Componendo and dividendo:

A. $\frac{5a + 7b}{5a - 7b}$

B. $\frac{5a - 7b}{5a + 7b} = \frac{4c + 3d}{4c - 3d}$

C. $\frac{5a + 7b}{5a - 7b} = \frac{4c + 3d}{4c - 3d}$

D. $\frac{5a + 7b}{5a + 7b} = \frac{4c - 3d}{4c - 3d}$

Answer: C



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5. If $A = \begin{bmatrix} 2 & 0 \\ -1 & 7 \end{bmatrix}$ then A^2 is :

A. $\begin{bmatrix} 4 & 0 \\ 1 & 49 \end{bmatrix}$

B. $\begin{bmatrix} 4 & 0 \\ -9 & 40 \end{bmatrix}$

C. $\begin{bmatrix} 4 & 0 \\ 9 & 49 \end{bmatrix}$

D. $\begin{bmatrix} 1 & 9 \\ -9 & 48 \end{bmatrix}$

Answer: B



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Questions Section C

1. The distance between station A and B by road is 240 km and by train it is 300 km. A car starts from station A with a speed x km/hr whereas a train starts from station B with a speed 20km/hr more than the speed of the car.

The time taken by car to reach station B is:

A. $\frac{240}{x}$

B. $\frac{300}{x}$

C. $\frac{20}{x}$

D. $\frac{300}{x + 20}$

Answer: A



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2. The distance between station A and B by road is 240 km and by train it is 300 km. A car starts from station A with a speed x km/hr

whereas a train starts from station B with a speed 20km/hr more than the speed of the car.

The time taken by car to reach station A is:

A. $\frac{240}{x}$

B. $\frac{300}{x}$

C. $\frac{20}{x}$

D. $\frac{300}{x + 20}$

Answer: D



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3. The distance between station A and B by road is 240 km and by train it is 300 km. A car starts from station A with a speed x km/hr whereas a train starts from station B with a speed 20km/hr more than the speed of the car.

If the time taken by train is 1 hour less than that taken by the car, then the quadratic equation formed is:

$$\text{A. } x^2 + 80x - 6000 = 0$$

B. $x^2 + 80x - 4800 = 0$

C. $x^2 + 240x - 1600 = 0$

D. $72 - 80x + 4800 = 0$

Answer: B



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4. The n^{th} term of an arithmetic progression

(A.P) is $(3n + 1)$:

The first three terms of this A.P. are :

A. 5, 6, 7

B. 3, 6, 9

C. 1, 4, 7

D. 4, 7, 10

Answer: D



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5. The n^{th} term of an arithmetic progression

(A.P) is $(3n + 1)$:

The common difference of the A.P. is :

A. .3

B. 1

C. -3

D. 2

Answer: A



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6. The n^{th} term of an arithmetic progression

(A.P) is $(3n + 1)$:

Which of the following is not a term of this A.P.

?

A. 25

B. 27

C. 28

D. 31

Answer: B



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7. The n^{th} term of an arithmetic progression

(A.P) is $(3n + 1)$:

Sum of the first 10 terms of this A.P. is :

A. 350

B. 175

C. -95

D. 70

Answer: B



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Section A

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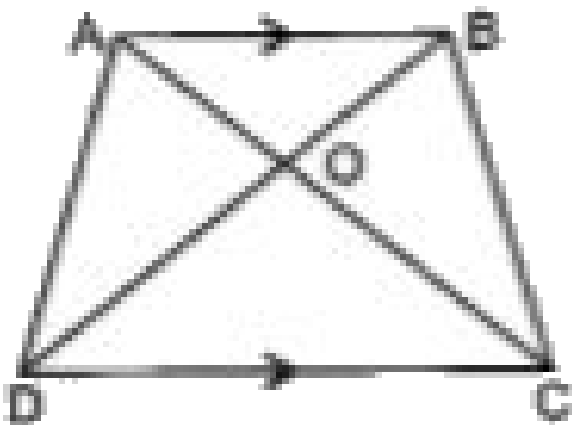
Answer: B



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3. ABCD is a trapezium with AB parallel to DC.

Then the triangle similar to $\triangle AOB$ is:



A. $\triangle ADB$

B. $\triangle ACB$

C. $\triangle COD$

D. $\triangle COB$

Answer: C



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D. none of these

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6. The solution set representing the following number line is:



A. $\{x : x \in R, -3 \leq x \leq 2\}$

B. $\{x : x \in R, -3 < x < 2\}$

C. $\{x : x \in R, -3 < x \leq 2\}$

D. $\{x : x \in R, -3 \leq x \leq 2\}$

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C. $(x - 2)(x - 2)(x + 1)$

D. $(x - 2)(x - 2)(x - 1)$

Answer: A



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3. The following bill shows the GST rates and the marked price of articles A and B:

BILL : GENERAL STORE		
Articles	Marked price	Rate of GST
A	₹300	12%
B	₹1200	5%

The total amount to be paid for the above bill is:

A. 1548

B. 1596

C. 1560

D. 1536

Answer: B



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$$-8 \leq x - 7 < -4, x \in I \text{ is :}$$

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B. $\{0, 1, 2, 3\}$

C. $\{-1, 0, 1, 2, 3\}$

D. $\{-1, 0, 1, 2\}$

Answer: D



5. If $\frac{5a}{7b} = \frac{4c}{3d}$, then by Componendo and dividendo :

A. $\frac{5a + 7b}{5a - 7c} = \frac{4c - 3d}{4c + 3d}$

B. $\frac{5a - 7b}{5a + 7b} = \frac{4c + 3d}{4c - 3d}$

C. $\frac{5a + 7b}{5a - 7b} = \frac{4c + 3d}{4c - 3d}$

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Answer: C



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Section C

1. The distance between station A and B by road is 240 km and by train it is 300 km. A car starts from station A with a speed : km/hr whereas a train starts from station B with a speed 20 km/hr more than the speed of the car.

The time taken by car to reach station B is:

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D. $\frac{300}{x + 20}$

Answer: A



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The time taken by car to reach station A is:

A. $\frac{240}{x}$

B. $\frac{300}{x}$

C. $\frac{20}{x}$

D. $\frac{300}{x + 20}$

Answer: D



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If the time taken by train is 1 hour less than that taken by the car, then the quadratic equation formed

A. $x^2 + 80x - 6000 = 0$

B. $x^2 + 80x - 4800 = 0$

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$$D. x^2 - 80x + 4800 = 0$$

Answer: B



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4. The distance between station A and B by road is 240 km and by train it is 300 km. A car starts from station A with a speed : km/hr whereas a train starts from station B with a speed 20 km/hr more than the speed of the

car.

The speed of the car is:

A. 60 km/hr

B. 120 km/hr

C. 40 km/hr

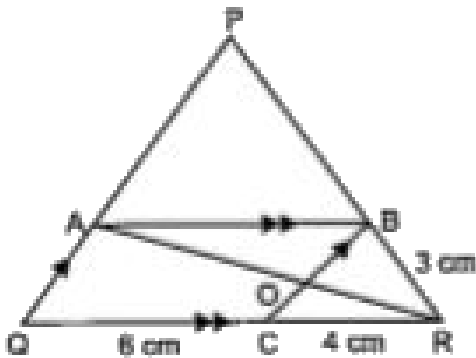
D. 80 km/hr

Answer: C



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5. In the given triangle PQR , $AB \parallel QR$, $OP \parallel CB$ and AR intersects CB at O .



Using the given diagram answer the following question:

The triangle similar to $\triangle ARQ$ is

A. $\triangle ORC$

B. $\triangle ARP$

C. $\triangle OBR$

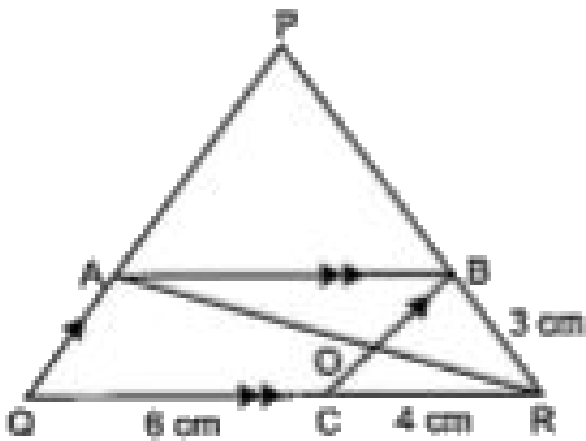
D. $\triangle QRP$

Answer: A



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6. In the given triangle PQR , $AB \parallel QR$, $OP \parallel CB$ and AR intersects CB at O .



Using the given diagram answer the following question:

$\Delta PQR \sim \Delta BCR$ by axiom :

A. SAS

B. AAA

C. SSS

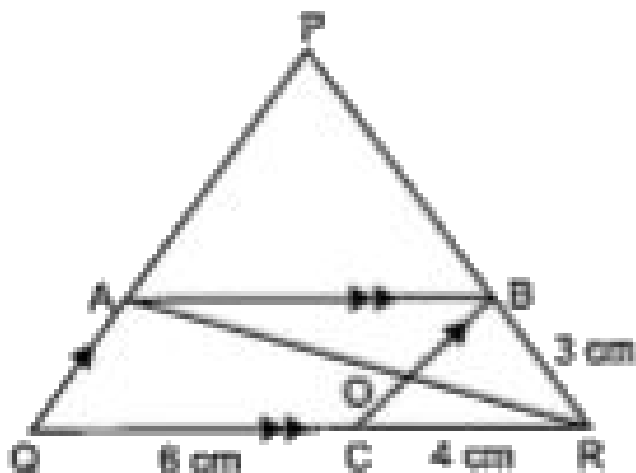
D. AAS

Answer: B



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7. In the given triangle PQR , $AB \parallel QR$, $OP \parallel CB$ and AR intersects CB at O .



Using the given diagram answer the following

question:

If $QC = 6$ cm, $CR = 4$ cm, $BR = 3$ cm. The length of

RP is:

A. 4.5 cm

B. 8 cm

C. 7.5 cm

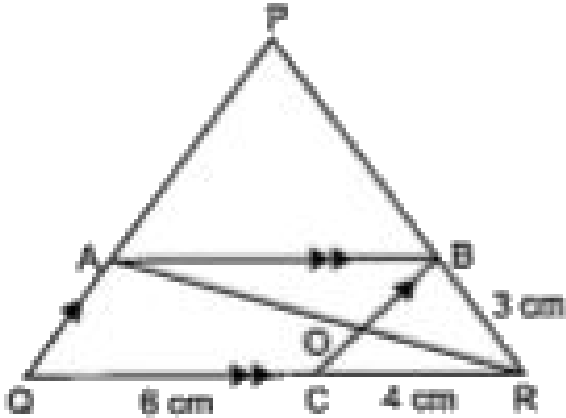
D. 5 cm

Answer: C



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8. In the given triangle PQR , $AB \parallel QR$, $OP \parallel CB$ and AR intersects CB at O .



Using the given diagram answer the following question:

The ratio $PQ:BC$ is:

A. 2:3

B. 3: 2

C. 5: 2

D. 2: 5

Answer: C



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9. The n^{th} term of an arithmetic progression

(A.P.) is $(3n + 1)$:

The first three terms of this A. P. are:

A. 5,6,7

B. 3,6,9

C. 1,4,7

D. 4,7,10

Answer: D



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10. The n^{th} term of an arithmetic progression (A.P.) is $(3n + 1)$:

The common difference of the A.P. is:

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Which of the following is not a term of this

A.P.?

A. 25

B. 27

C. 28

D. 31

Answer: B



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12. The n^{th} term of an arithmetic progression

(A.P.) is $(3n + 1)$:

Sum of the first 10 terms of this A.P. is:

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B. 175

C. -95

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Answer: B



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