MATHS

BOOKS - SELINA MATHS (ENGLISH)

SPECIMEN QUESTION PAPER (MATHEMATICS)

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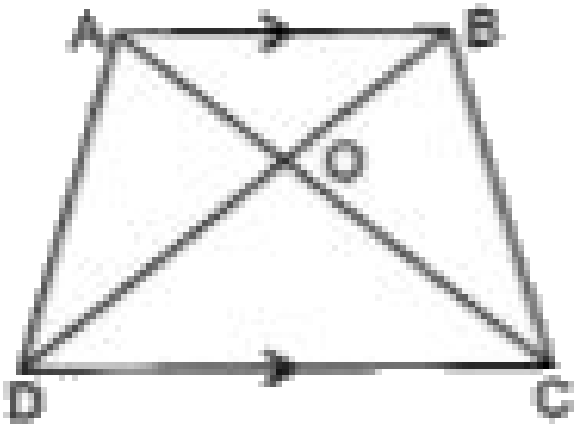
3. ABCD is a trapezium with AB parallel to DC.

Then the triangle similar to ΔAOB is:



A. ΔADB

B. ΔACB

C. ΔCOD

D. ΔCOB

Answer: C

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4. The mean proportion between 9 and 16 is:

A. 25

B. 144

C. 7

D. 12

Answer: D

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5. 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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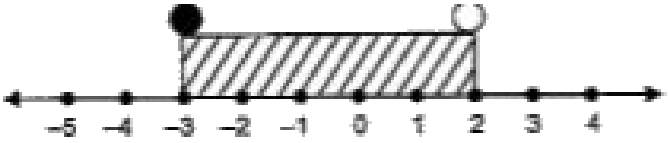
6. The solution set representing the following number line is:



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

Answer: A

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7. 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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8. If $\Delta ABC \sim \Delta QRP$ then the correspnoding 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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9. 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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10. 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. 1.392 and 0.360

Answer: B

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11. 1.5,3, x and 8 are in proportion, then x is equal to:

A. 6

B. 4

C. 4.5

D. 16

Answer: C

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12. 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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13. 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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14. 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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15. 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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16. If (x-2) is a factor of the polynomial $x^3 + 2x^2 - 13 + k$ then 'k' is equal to

A. -10

B. 26

C. -26

D. 10

Answer: D

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Section B

1. A man deposited 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 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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4. The solution set for the linear inequation $-8 \leq x - 7 < -4, x \in I$ is :

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

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

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

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

Answer: D

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5. If $\frac{5a}{7b} = \frac{4c}{3d}$, then by Compenendo 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. $\frac{5a+7b}{5a-7b}=\frac{4c+3d}{4c-3d}$

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

Answer: C

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

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

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

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

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

Answer: B

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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:

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 : 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 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 : km/hr whereas a train starts from station B with a speed 20 km/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

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

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

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

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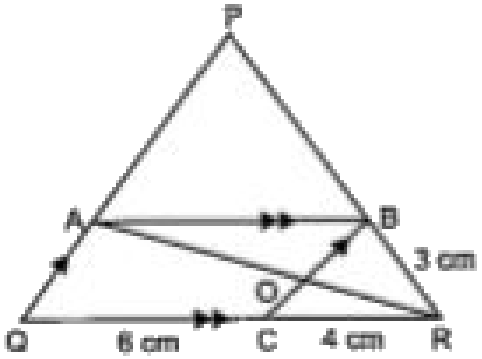
5. In the given triangle $PQR, AB||QR, OP||CB$ and AR intersects CB at O.



Using the given diagram answer the following question:

The triangle similar to ΔARQ is

A. ΔORC

B. ΔARP

C. ΔOBR

D. ΔQRP

Answer: A

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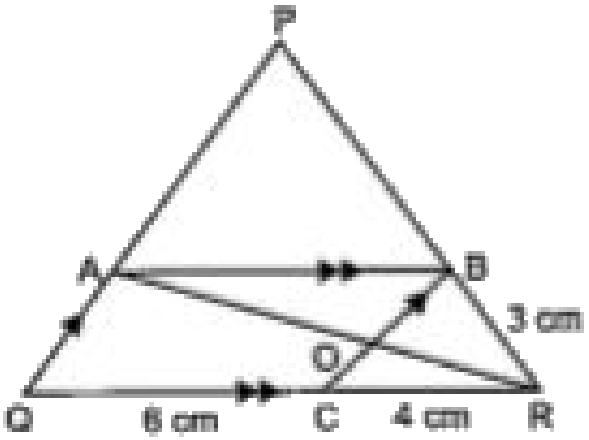
6. In the given triangle $PQR, AB||QR, OP||CB$ and AR intersects CB at O.



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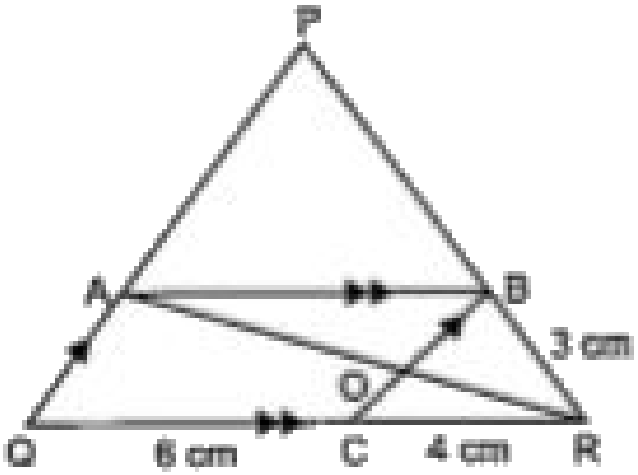
7. In the given triangle $PQR, AB||QR, OP||CB$ and AR intersects CB at O.



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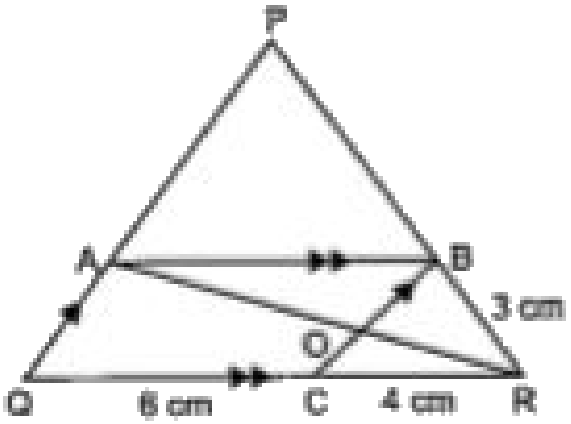
8. In the given triangle $PQR, AB||QR, OP||CB$ and AR intersects CB at O.



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:

A. 3

B. 1

C. -3

D. 2

Answer: A

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11. 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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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:

A. 350

B. 175

C. -95

D. 70

Answer: B

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