



MATHS

BOOKS - SELINA MATHS (ENGLISH)

SAMPLE PAPER 2

Questions Section A

1. If $\begin{bmatrix} x - 2y & 5 \\ 3 & y \end{bmatrix} = \begin{bmatrix} 6 & 5 \\ 3 & -2 \end{bmatrix}$ then the value of x is :

A. -2

B. 0

C. 1

D. 2

Answer: D



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2. The zeroes of $x^2 - 2x - 8$ are:

A. 2, 4

B. 4, -2

C. -2, -2

D. -4, 4

Answer: B



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3. Sides of two similar triangles are in the ratio 4:9. Areas of these triangles are in the ratio :

A. 2:3

B. 4: 9

C. 81: 16

D. 16: 81

Answer: D



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4. In triangle ABC , $\angle BAC = 90^\circ$ and $AD \perp BC$ Such that $\angle OBA = \angle DAC$ Then:

A. $BD \cdot CD = BC^2$

B. $AB \cdot AC = BC^2$

C. $BD \cdot CD = AD^2$

D. $AB \cdot AC = AD^2$

Answer: C



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5. A dealer in a city buys some goods worth Rs.5,000 from the same city. If the rate of GST is 18%, then the IGST levied on it is:

A. Rs.900

B. Rs.450

C. Rs. 225

D. 0

Answer: D



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6. 30^{th} term of the A.P: 10, 7, 4,, is:

A. 97

B. 77

C. -77

D. -87

Answer: C



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7. What is the remainder, if we divide

$6x^3 + x^2 - 2x + 4$ by $x - 2$?

A. 48

B. 52

C. -26

D. -24

Answer: B



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8. Nisha has a four year recurring deposit account in a bank and deposits Rs.800 per month. If she gets Rs.9,800 as interest, then the rate of interest is:

A. 10 %

B. 10.5 %

C. 12 %

D. 12.5 %

Answer: D



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9. Which of the following is not a linear inequality ?

A. $ax^2 + bx + c < 0$

B. $ax + by + c \geq 0$

C. $ax + b < 0$

D. $ax + by + c \leq 0$

Answer: A



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10. If 3 times the third term of an AP. is equal to 5 times, the fifth term, then its eighth term is :

A. 0

B. 1

C. 2

D. 3

Answer: A



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11. If $A = \begin{bmatrix} 2 & -1 \\ 2 & 0 \end{bmatrix}$, $B = \begin{bmatrix} 1 & 0 \\ 0 & 2 \end{bmatrix}$ and $C = \begin{bmatrix} -3 & 2 \\ 4 & 0 \end{bmatrix}$ then, $AB + C =$

A. $\begin{bmatrix} -1 & 0 \\ 6 & 0 \end{bmatrix}$

B. $\begin{bmatrix} 2 & -2 \\ 2 & 0 \end{bmatrix}$

C. $\begin{bmatrix} 1 & -2 \\ 6 & 0 \end{bmatrix}$

D. $\begin{bmatrix} -1 & 7 \\ 9 & 0 \end{bmatrix}$

Answer: A



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12. If $(2a + 5y) : (5x - 7y) = 9 : 4$, then $x:y=$

A. 43 : 49

B. 5:2

C. 83:37

D. 11:7

Answer: C



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13. The solution of $2x - 5 \leq 5x < 11, x \in R$

is :

A. $\left\{ x : 3 \leq x < \frac{7}{5}, x \in R \right\}$

$$\text{B. } \left\{ x : \frac{-7}{5} \leq x < 3, x \in R \right\}$$

$$\text{C. } \left\{ x : \frac{7}{5} \leq x < 3, x \in R \right\}$$

$$\text{D. } \left\{ x : 3 \leq x < -\frac{7}{5}, x \in R \right\}$$

Answer: A



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14. A retailer have goods worth Rs.10,000 and sells it to a consumer for Rs.13,500. If the rate of GST is 18%, then the GST payable by him to the government is:

A. Rs.630

B. Rs.243

C. Rs.180

D. Rs.423

Answer: A



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15. Arun deposits Rs.2,000 per month in a cumulative account for 2 years at the rate of

9% per annum. The amount received by him at the time of maturity is :

A. Rs.48,000

B. Rs.52,500

C. Rs.57,625

D. Rs.55,500

Answer: B



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16. If a , 2 , 10 , b are in continued proportion, then the values of a and b , respectively are :

A. $1,5$

B. $0.4,50$

C. $5,40$

D. $2, 0.6$

Answer: B



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Questions Section B

1. If $B = \begin{bmatrix} -1 & 5 \\ 0 & 3 \end{bmatrix}$ then

$A - 2B = \begin{bmatrix} 0 & 4 \\ -7 & 5 \end{bmatrix}$ the matrix A is equal to

A. $\begin{bmatrix} 2 & 14 \\ -7 & 11 \end{bmatrix}$

B. $\begin{bmatrix} -2 & 14 \\ 7 & 11 \end{bmatrix}$

C. $\begin{bmatrix} 2 & -14 \\ 7 & 11 \end{bmatrix}$

D. $\begin{bmatrix} -2 & 14 \\ -7 & 11 \end{bmatrix}$

Answer: D



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2. What is the factorization of $2x^2 - 7x - 15$?

A. $(x + 5)(2x - 3)$

B. $(x + 3)(2x - 5)$

C. $(x - 5)(2x + 3)$

D. $(x - 3)(2x - 5)$

Answer: C



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3. Which among the following is one of the factors of $x^2 + \frac{x}{6} + \frac{1}{6}$?

A. $3x + 1$

B. $2x + 1$

C. $x - \frac{1}{5}$

D. $x - \frac{1}{2}$

Answer: B



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4. A train travels 360 km at a uniform speed. If the speed had been 5 km/h more, it would have taken 1 hour less for the same journey. Find the speed of the train.

A. 30 km/hr

B. 40 km/hr

C. 50 km/hr

D. 60 km/hr

Answer: B



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5. If the first second and last terms of an A. P. are a , b and $2a$ respectively, its sum is :

A. $\frac{ab}{2(b - a)}$

B. $\frac{ab}{b - a}$

C. $\frac{3ab}{2(b - a)}$

D. None of these

Answer: C



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6. The function $f(x) = bx^2 + x - 7$ has a remainder of 2, when divided by $x - 3$, find the value of b .

A. 2

B. $\frac{2}{3}$

C. 3

D. $-\frac{3}{2}$

Answer: B



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Questions Section C

1. Vier wants to participate in a 200m race. He can currently run that distance in 51 seconds and with each day of practice it takes him 2 seconds less. He wants to do in 31 seconds:

Which of the following terms are in AP. for the given situation.

A. 51, 53, 5

B. 51, 49, 47

C. $-51, -53, -55$

D. 51, 55, 59

Answer: B



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2. Vier wants to participate in a 200m race. He can currently run that distance in 51 seconds and with each day of practice it takes him 2 seconds less. He wants to do in 31 seconds:

Which of the following term is not in the AP of the given situation.

A. 41

B. 30

C. 37

D. 39

Answer: B



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3. Vier wants to participate in a 200m race. He can currently run that distance in 51 seconds and with each day of practice it takes him 2 seconds less. He wants to do in 31 seconds:

It n^{th} term of an AP is given by $T_n = 2n + 3$ then the common difference of an AP is :

A. 2

B. 3

C. 5

D. 1

Answer: A



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4. Vier wants to participate in a 200m race. He can currently run that distance in 51 seconds and with each day of practice it takes him 2 seconds less. He wants to do in 31 seconds:

The value of x , for which $2x$, $x + 10$, $3x + 2$ are three consecutive terms of an AP.

A. 6

B. -6

C. 18

D. -18

Answer: A



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5. A dealer in Lucknow buys Goods and Services worth Rs.50,000 from Mumbai at the rate of GST 28% and then sold to a consumer in Bhopal at 20% profit, at the same rate of

GST.

The cost price of goods and services for the consumer in Bhopal is :

A. Rs.50,500

B. Rs.55,000

C. Rs.60,500

D. Rs.70,400

Answer: B



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6. A dealer in Lucknow buys Goods and Services worth Rs.50,000 from Mumbai at the rate of GST 28% and then sold to a consumer in Bhopal at 20% profit, at the same rate of GST.

Net tax payable by the dealer in Lucknow to the central government is :

A. Rs.1,400

B. Rs.770

C. Rs.700

D. Rs.960

Answer: C



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7. A dealer in Lucknow buys Goods and Services worth Rs.50,000 from Mumbai at the rate of GST 28% and then sold to a consumer in Bhopal at 20% profit, at the same rate of GST.

Output tax paid by dealer in Mumbai is :

A. Rs.14,000

B. Rs.15,400

C. Rs.7,000

D. Rs.7,700

Answer: A



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8. A dealer in Lucknow buys Goods and Services worth Rs.50,000 from Mumbai at the rate of GST 28% and then sold to a consumer in Bhopal at 20% profit, at the same rate of

GST.

Total amount, inclusive of GST, paid by consumer in Bhopal is :

A. Rs.55,000

B. Rs.62,700

C. Rs.69,000

D. Rs.70,400

Answer: D



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