KAPOL VIDYANIDHI INTERNATIONAL SCHOOL (ICSE)

STD X MATHEMATICS
EXAMINATION: 1st SEMESTER PRELIMINARY
MARKS:40
TIME : 1HR 30MIN
DATE : 25/10/21

*Required

Email *

Your email address

Name of the student *

Your answer

Division *

Choose

Roll No *

Your answer

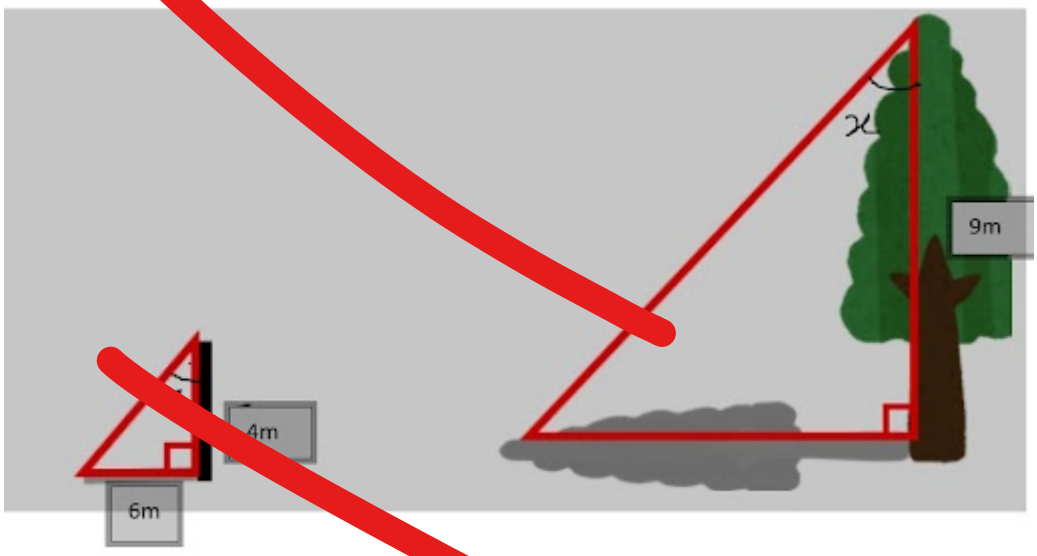
Section A (1 mark*16 questions)

Each question carries 1 mark.

1) An article is sold for ₹ 4,000. If consumer pays ₹ 4,480 for the article inclusive of GST, then the rate of GST is ------ * 1 point

- 5
- 12
- 28
- 18

2) If a pole 4 m high casts a shadow of 6 m then at a same time a 9 m tall tree will cast a shadow of length ---------- * 1 point



- 14.5 m
- 15 m
- 13.5 m
- 16 m

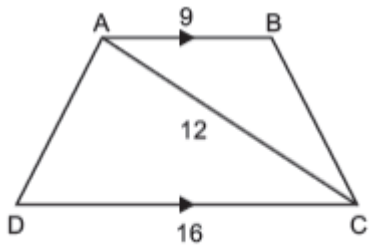
3) Which of the following equation has no rational roots ? * 1 point

- ○ $2x^2-5x-12=0$
- ● $5x^2-8x-12=0$
- ○ $x^2+4x-60=0$
- ○ $x^2+6x-16=0$

4) If $x^2 + px - 63 = (x + 7) (x - 9)$, then p is ---------- * 1 point

- ○ 16
- ● -2
- ○ -16
- ○ 2

5)In the given figure AB | | DC, AB = 9 cm , AC = 12 cm , DC = 16 cm. Δ BAC and Δ ACD are similar by ---------- axiom. * 1 point



- ○ SSS
- ● SAS
- ○ AA
- ○ AAS

6) $-1 \leq x - 3 < 4$, $x \in N$, the solution set is * 1 point

- [x] { 2 , 3 , 4 , 5 , 6}
- [ ] { x / 2 ≤ x <7, x { x / 2 ≤ x <7, x ∈R}
- [ ] { 2 , 3 , 4 , 5 , 6 , 7}
- [ ] { 3 , 4 , 5 , 6 , 7}

7) If a_n is the nth term of AP and $a_{11} - a_7 = -20$, then the common difference is --------- * 1 point

- [x] -5
- [ ] 5
- [ ] 4
- [ ] -4

8) If a : b = b : c , then $(a^2 + b^2) : (b^2 + c^2)$ = ---------- * 1 point

- [ ] a/b
- [x] a/c
- [ ] b/c
- [ ] c/a

9) Sarita deposited ₹250 per month for 1 year at 8 % p. a. in recurring deposit account. The interest earned at the time of maturity is ----- * 1 point

- ₹120
- ₹135
- ₹125
- ₹130

10) * 1 point

If $\begin{pmatrix} 3x & x \\ 2y & y \end{pmatrix}\begin{pmatrix} 1 \\ 4 \end{pmatrix} = \begin{pmatrix} 14 \\ 18 \end{pmatrix}$, then the values of x and y are ----

- x=2 , y=4
- x=4, y=3
- x=3, y=4
- x=2, y=3

11)The factors of $x^2 - 10x - 24$ are ------ * 1 point

- (x − 6) (x − 4)
- (x − 6) (x + 4)
- (x − 12) (x + 2)
- (x + 12) (x − 2)

12) When the polynomial $x^3 + 3x^2 - 5$ is divided by (x + 2) , the remainder is -------- * 1 point

- [ ] 2
- [ ] 1
- [x] -1
- [ ] -2

13) The roots of the equation $(3x - 4)^2 = 25$ are -------- * 1 point

- [x] 3 , - 1/3
- [ ] ±3/4
- [ ] ± 5
- [ ] ± 3

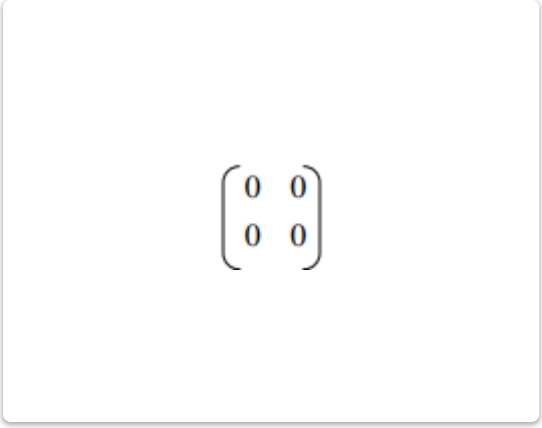
14) What should be subtracted from $4x^3 + 6x^2 - 5x$ so that (x – 1) is a factor ? * 1 point

- [x] 5
- [ ] -5
- [ ] 6
- [ ] 4

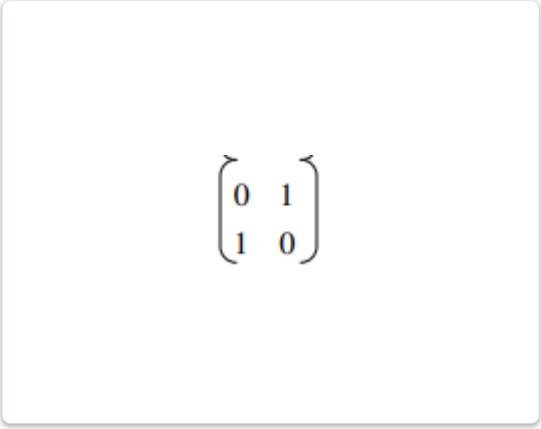
15) * 1 point

1) If $A = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$, then A^2 is ---------

Option 1



Option 2



Option 3

Option 4

16) The list price of an air conditioner is ₹45,000. Dealer gives a discount of 10%. Rate of GST charged is 28%.Find GST amount charged by the dealer. * 1 point

- ₹ 40,500
- ₹ 11,340
- ₹ 9,520
- ₹ 56,340

Section B (2 marks * 6 question)

17) The value of ' a ' for which both polynomials $x^3 + ax^2 - 3$ and $ax^3 + x^2 - 11$ have the same remainder when divided by (x – 2) is * 2 points

- 2
- 3
- 1
- 4

18) If the sum of 3 consecutive numbers in an AP is 18 and their product is 192, then the numbers are * 2 points

- 4,6,8
- 3,6,9
- 5,6,7
- 1,5,9

19) * 2 points

If $\frac{x^2 + y^2}{x^2 - y^2} = \frac{17}{8}$, then x : y is ---------

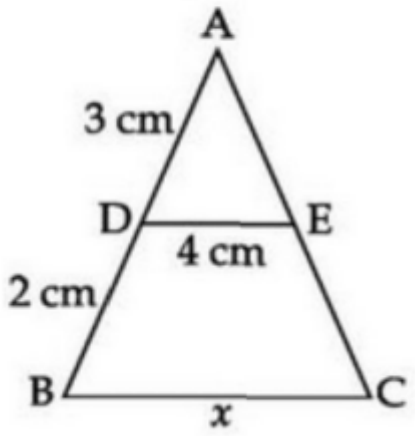
- 4:3
- 3:5
- 5:3
- 4:5

20) The nth term of AP is 5n + 3 .The sum of the first 20 terms is ------ * 2 points

- [x] 1110
- [ ] 1010
- [ ] 1210
- [ ] 1310

21) * 2 points

In the figure given below, if DE || BC, then x equals :



- [x] 6.7 cm
- [ ] 5 cm
- [ ] 8 cm
- [ ] 2 cm

22) * 2 points

Niharika deposits ₹ 400 every month for $2\frac{1}{2}$ years in a Recurring Deposit Scheme. If she earns ₹ 1085 as interest at the time of maturity, then the rate of interest is

- 12%
- 10%
- 7%
- 8%

Section C (4 marks *3 questions)

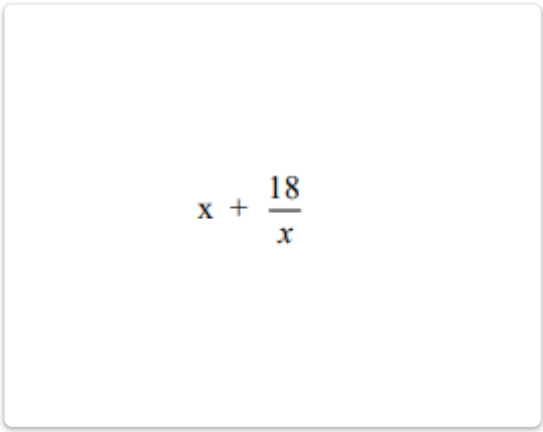
23) The product of digits of two digit number is 18. If 27 is subtracted from the number the digits interchange their places.

i) If the tens digit is x , then unit digit is ---- * 1 point

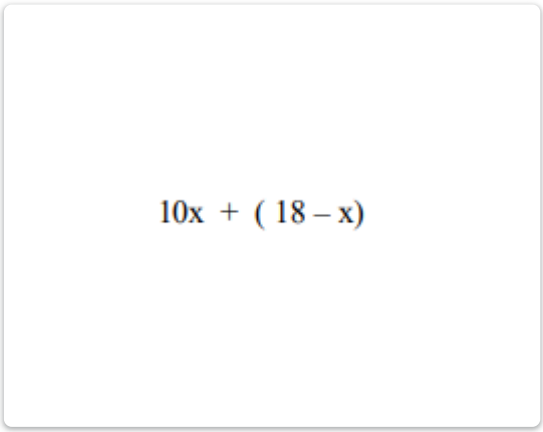
- 18 − x
- x − 18
- 18/x
- x/18

ii) The two digit number is ----- *

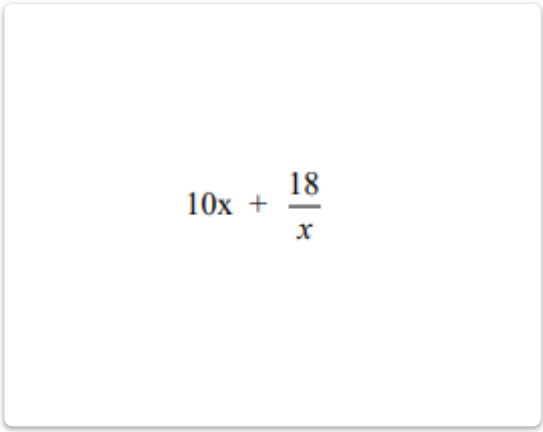
1 point



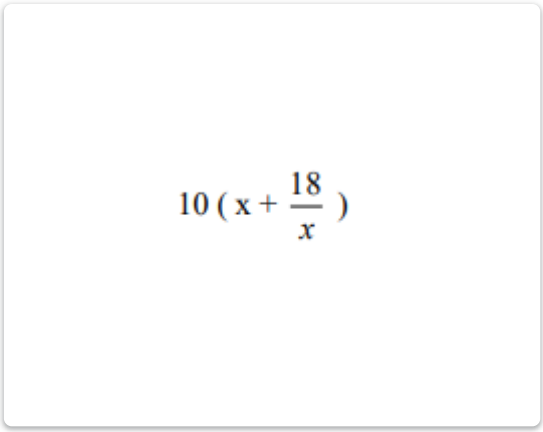
Option 1



Option 2



Option 3



Option 4

iii) The quadratic equation is ------- *

1 point

- $x^2 - 3x - 18 = 0$
- $x^2 + 3x - 18 = 0$
- $x^2 + 6x - 18 = 0$
- $x^2 - 6x - 18 = 0$

iv) The original two digit number is ------- * 1 point

- [ ] 92
- [ ] 29
- [x] 63
- [ ] 36

24) The nth term of AP is 75 – 3n

i) The 1st 3 terms of AP are -------- * 1 point

- [ ] 75 , 78 , 81
- [ ] 72 , 75 , 78
- [ ] 69 , 66 , 63
- [x] 72 , 69 , 66

ii) The 20th term of AP is ------- * 1 point

- [ ] 20
- [x] 15
- [ ] 26
- [ ] 22

iii) If the nth term is 24 , the value of n is ------ * 1 point

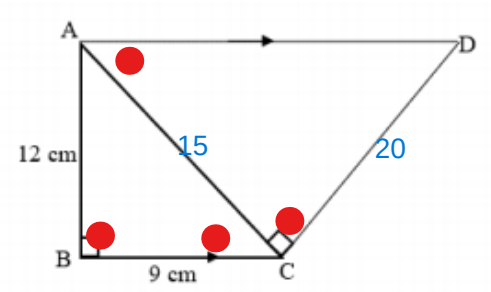
- [x] 17
- [ ] 18
- [ ] 21
- [ ] 24

iv) The sum first of 20 terms is ----- * 1 point

- [ ] 840
- [ ] 780
- [x] 870
- [ ] 640

25)

In the given figure AD ∥ BC, $\angle ABC = 90^0$ and DC ⊥ AC . AB = 12 cm , BC = 9 cm



i) The axiom by which the triangles are similar is ----- * 1 point

- [x] AA
- [ ] SAS
- [ ] SSS
- [ ] AAS

ii) The proportionality of corresponding sides is ------- * 1 point

not

- [x] Option 1: $\frac{AB}{DC} = \frac{AD}{AC}$
- [ ] Option 2: $\frac{AB}{DC} = \frac{BC}{CA}$
- [ ] Option 3: $\frac{BC}{CA} = \frac{DC}{AB}$
- [ ] Option 4: $\frac{BC}{CA} = \frac{DA}{AC}$

iii) The sides AC and CD respectively are -------- * 1 point

- [ ] 17cm & 21 cm
- [x] 15cm & 20cm
- [ ] 16cm & 20 cm
- [ ] 13cm & 17 cm

iv) The length of side AD is ----- * 1 point

- [x] 25cm
- [ ] 29cm
- [ ] 21cm
- [ ] 23cm

A copy of your responses will be emailed to the address that you provided.

Submit Clear form

Never submit passwords through Google Forms.