

MT **FIRST TERM SUMMATIVE EXAMINATION - 2022**

8 - Std

MATHEMATICS

Reg. No.

--	--	--	--	--	--

Time : 2.00 Hrs

Marks : 60

I Choose the best answer.

5 X 1 = 5

1. The square of 43 ends with digit
a) 9 b) 6 c) 4 d) 3
2. The cube has faces
a) 4 b) 5 c) 3 d) 6
3. $7P^3 \times (2P^2)^2 \div \dots\dots\dots$
a) $14P^{12}$ b) $28P^7$ c) $9P^7$ d) $11P^{12}$
4. What is the marked price of a hat which is bought for Rs. 210 at 16% discount?
a) Rs. 243 b) Rs. 176 c) Rs. 230 d) Rs. 250
5. The hypotenuse of a right angled triangle of sides 12cm and 16cm is
a) 28cm b) 20 cm c) 24cm d) 21 cm

II Fill in the blanks.

1 X 5 = 5

6. The standard form of $\frac{48}{-84}$ is
7. The longest chord of a circle is
8. $(a + b)^2 = (a + b) \times \dots\dots\dots$
9. The sum of the three angles of a triangle is
10. The eleventh Fibonacci number is

III Say true or false.

5 X 1 = 5

11. The scientific form of 123,456 is 1.23456×10^{-2} .
12. The angle of the semicircle is 180° .
13. $(a - b)^2 = (a + b)(a - b)$.
14. Loss = cost of price - selling price.
15. The 2 digit numbers contain the number 7 is 18.

MT 8 - செய்தல் EM பக்கம் - 1

IV Answer any five of the following questions.

5 X 2 = 10

16. Find the cube root of 27000.
17. Find the area of the sectors its length of the arc 48m and radius is 10m.
18. Expand : $(3m + 5)^2$.
19. Factorise : $y^2 - 10y + 25$.
20. Find the difference in C.I. and S.I. for P = Rs. 5000, r = 4% p.a. n = 7 years.
21. Using repeated subtraction method, find the HCF of 36 and 80.
22. Can a right triangle have sides that measure 5cm, 12cm and 13cm.

V Answer any four of the following questions.

4 X 5 = 20

23. Simplify : $\left[\frac{11}{8} \times \left(\frac{-6}{33} \right) \right] + \left[\frac{1}{3} + \left(\frac{3}{5} + \frac{9}{20} \right) \right] - \left[\frac{4}{7} \times \frac{-7}{5} \right]$.

24. Find the square root by long division method : 17956.
25. Find the area of the shaded region in the square of side 10cm as given in the figure.

26. Factorise : $x^3 + 15x^2 + 75x + 125$.

27. The mat of length 180m is made by 15 women in 12 days. How long will it take for 32 women to make a mat of length 512m?
28. Using repeated subtraction method. Find the HCF of the 320, 120 and 95.

VI Answer the following questions.

1 X 8 = 8

29. Construct a quadrilateral ABCD with AB = 5cm, BC = 4.5cm, CD = 3.8cm, DA 4.4cm and AC = 6.2cm. Also find its area. **(OR)** Construct a trapezium DESK in which \overline{DE} is parallel to \overline{KS} , DE = 8cm, ES = 5.5cm, KS = 5m and KD = 6cm, Also find its area.
30. Draw a straight line by joining the points A (-2, 6) and B (4, -3). **(OR)** Draw the graph of the equation $y = x - 4$.

1 x 7 = 7

MT 8 - അതിർവരമ്പ് EM പാലം - 2

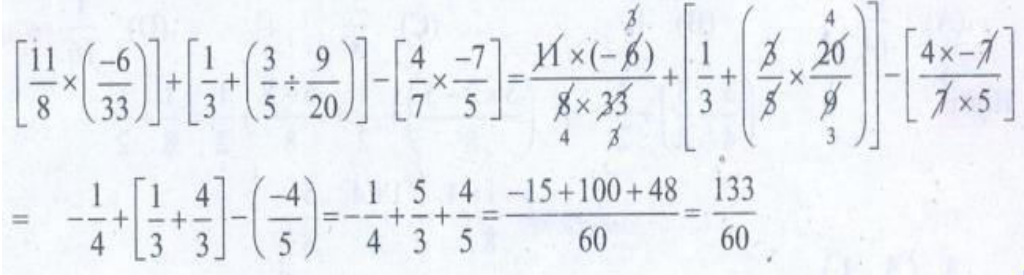
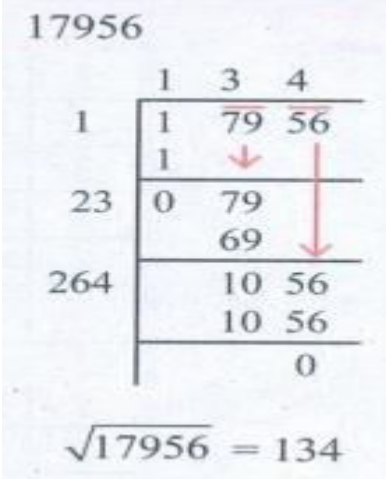
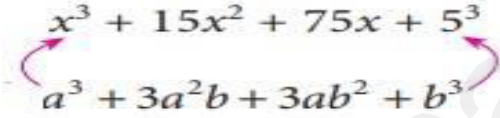


Orange International Matric Hr Sec School

#4/4, Shiva Gardens, Chetpet Road, Aagaram Village,
Vinnamangalam Post, Arni -632316.Tiruvannamalai district.

ANSWER KEY

Q.No	Solution	Mark
1	a) 9	1
2	d) 6	1
3	b) $28P^7$	1
4	d) Rs. 250	1
5	b) 20 cm	1
6	$-\frac{4}{7}$	1
7	Diameter	1
8	a+b	1
9	180°	1
10	89	1
11	False	1
12	True	1
13	False	1
14	True	1
15	False	1
16	By prime factorisation, we have $27000 = 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5$ $\therefore \sqrt[3]{27000} = 2 \times 3 \times 5 = 30$	2
17	Length of the arc = 48 m, r = 10 m Area of the sector A = $lr/2$ sq. units $l = 48 \text{ m}, r = 10 \text{ m}$ $= [48 \times 10]/2 \text{ m}^2$ $= 24 \times 10 \text{ m}^2$ $= 240 \text{ m}^2$ Area of the sector A = 240 m^2	2
18	$(3m + 5)^2$ Comparing $(3m + 5)^2$ with $(a + b)^2$ we have $a = 3m$ and $b = 5$ $(a + b)^2 = a^2 + 2ab + b^2$ $(3m + 5)^2 = (3m)^2 + 2(3m)(5) + 5^2$ $= 3^2 m^2 + 30m + 25$ $= 9m^2 + 30m + 25$	2
19	$y^2 - 10y + 25 = y^2 - 10y + 5^2$ Comparing with $a^2 - 2ab + b^2 = (a - b)^2$ we have $a = y, b = 5$ $\Rightarrow y^2 + 2(y)(5) + 5^2 = (y - 5)^2$ $\therefore y^2 - 10y + 25 = (y - 5)^2$	2
20	For 2 years, C.I - S.I = $P\left(\frac{r}{100}\right)^2 = 5000 \times \frac{4}{100} \times \frac{4}{100} = ₹ 8$	2
21	36 and 80 $m = 80, \quad n = 36$ $80 - 36 = 44, \quad \text{now } n = 44, \quad m = 36$ Since $n > m$, we should do $n - m$ $44 - 36 = 8, \quad \text{now } n = 8, \quad m = 36$ $36 - 8 = 28$ Similarly, processing, proceeding, we do repeated subtraction till $m = n$ $28 - 8 = 20$ $20 - 8 = 12$ $12 - 8 = 4$ $8 - 4 = 4$ now $m = n = 4$ \therefore HCF is 4	2
22	Take $a = 5, b = 12$ and $c = 13$ Now, $a^2 + b^2 = 5^2 + 12^2 = 25 + 144 = 169 = 13^2 = c^2$ By the converse of Pythagoras theorem, the triangle with given measures is a right angled triangle.	2

23		5
24		5
25	<p>No Figure is given in the question. So in my opinion, full marks can be given.</p>	5
26	<p>$x^3 + 15x^2 + 75x + 125$ This can be written as $x^3 + 15x^2 + 75x + 5^3$</p>  <p>Comparing with $a^3 + 3a^2b + 3ab^2 + b^3 = (a + b)^3$ we get $a = x$, $b = 5$ The given expression can be expressed as $(x)^3 + 3(x)^2(5) + 3(x)(5)^2 + (5)^3 = (x + 5)^3$ $= (x + 5)(x + 5)(x + 5)$ are the three factors.</p>	5
27	<p>Formula Method: Here, $P_1 = 15$, $D_1 = 12$ and $W_1 = 180$ and $P_2 = 32$, $D_2 = x$ and $W_2 = 512$</p> <p>Using the formula, $\frac{P_1 \times D_1}{W_1} = \frac{P_2 \times D_2}{W_2}$</p> $\Rightarrow \frac{15 \times 12}{180} = \frac{32 \times x}{512}$ $\Rightarrow 1 = \frac{32 \times x}{512} \Rightarrow x = \frac{512}{32} = 16 \text{ days.}$	5
28	<p>Let us take 320 & 120 first $m = 320$, $n = 120$ $m - n = 320 - 120 = 200$ $m = 200$, $n = 120$ $\therefore m - n = 200 - 120 = 80$ $120 - 80 = 40$ $80 - 40 = 40$ \therefore HCF of 320, 120 is 40</p>	5

Now let us find HCF of 40 & 95

$$m = 95, n = 40$$

$$\therefore m - n = 95 - 40 = 55$$

$$55 - 40 = 15$$

$$40 - 15 = 25$$

$$25 - 15 = 10$$

$$15 - 10 = 5$$

$$10 - 5 = 5$$

HCF of 40 & 95 is 5

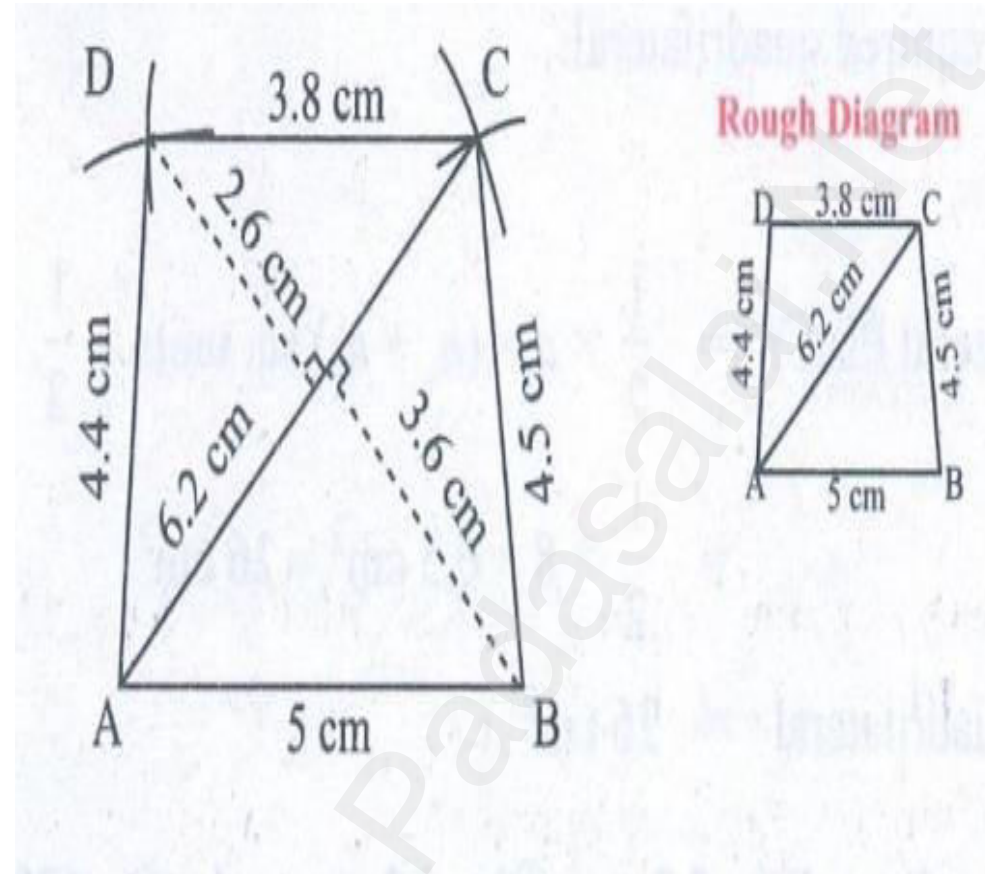
\therefore **HCF of 320, 120 & 95 is 5**

29

a

Given :

AB = 5 cm, BC = 4.5 cm, CD = 3.8 cm, DA = 4.4 cm, AC = 6.2 cm

**Steps:**

1. Draw a line segment AB = 5 cm
2. With A and B as centers drawn arcs of radii 6.2 cm and 4.5 cm respectively and let them cut at C.
3. Joined AC and BC.
4. With A and C as centres drawn arcs of radii 4.4 cm and 3.8 cm respectively and let them at D.
5. Joined AD and CD.
6. ABCD is the required quadrilateral.

Calculation of Area:

$$\begin{aligned} \text{Area of the quadrilateral ABCD} &= \frac{1}{2} \times d \times (h_1 + h_2) \text{ sq. units} \\ &= \frac{1}{2} \times 6.2 \times (2.6 + 3.6) \text{ cm}^2 \\ &= 3.1 \times 6.2 = 19.22 \text{ cm}^2 \end{aligned}$$

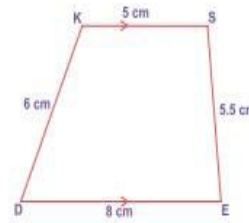
(or)

b

8

Given:

$DE=8\text{cm}$, $ES=5.5\text{cm}$, $KS=5\text{cm}$,
 $KD=6\text{cm}$ and $\overline{DE} \parallel \overline{KS}$



Rough diagram

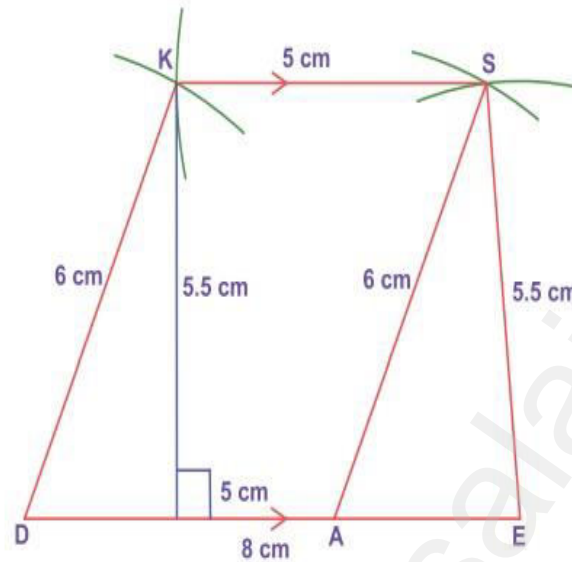


Fig. 5.48

Steps:

1. Draw a line segment $DE=8\text{cm}$.
2. Mark the point A on DE such that $DA=5\text{cm}$.
3. With A and E as centres, draw arcs of radii 6cm and 5.5cm respectively. Let them cut at S . Join AS and ES .
4. With D and S as centres, draw arcs of radii 6cm and 5cm respectively. Let them cut at K . Join DK and KS .
5. $DESK$ is the required trapezium.

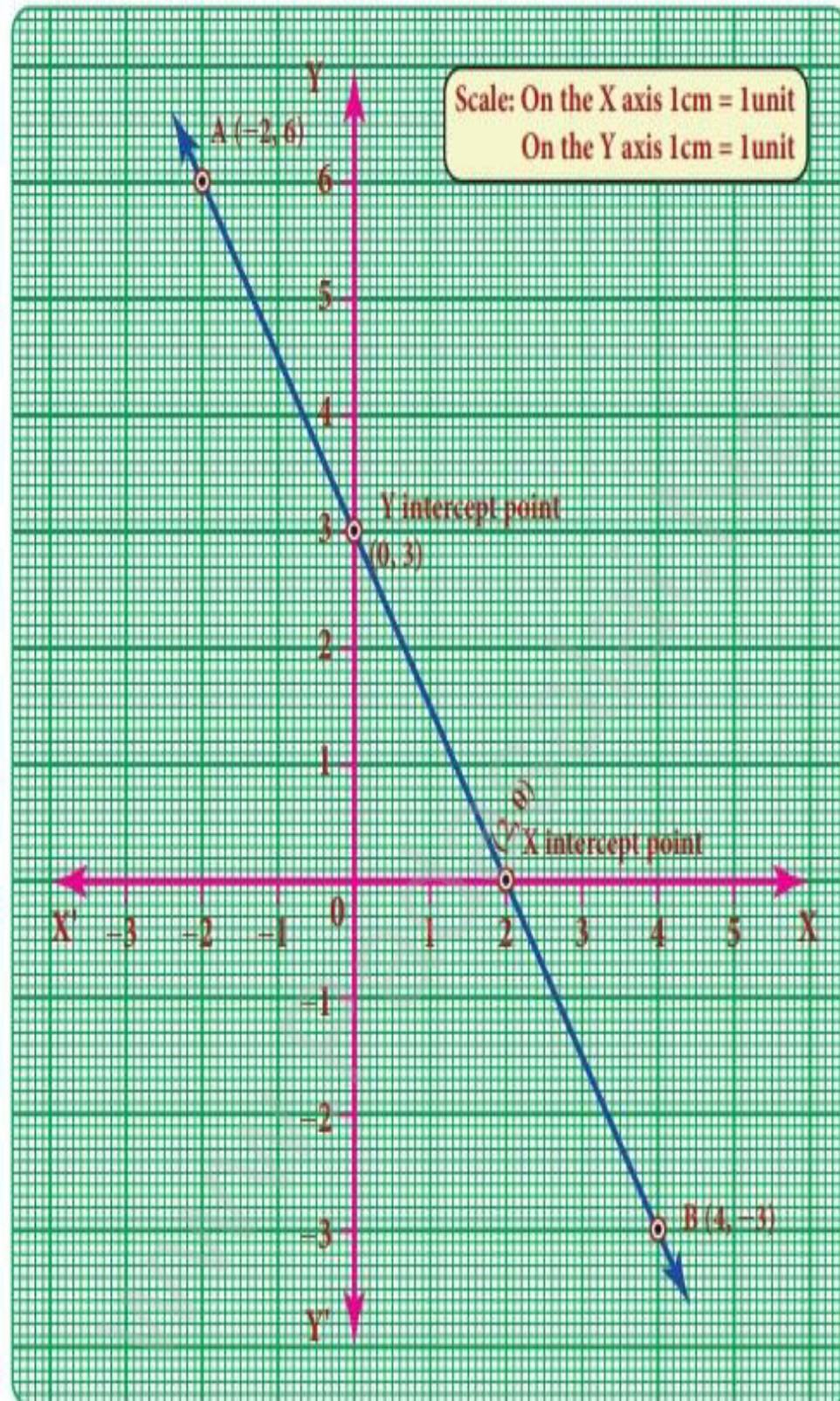
Calculation of Area:

$$\begin{aligned} \text{Area of the trapezium } DESK &= \frac{1}{2} \times h \times (a + b) \text{ sq units} \\ &= \frac{1}{2} \times 5.5 \times (8 + 5) = 35.75 \text{ sq.cm} \end{aligned}$$

30 a The given first point $A(-2,6)$ lies in the II quadrant and plot it. Second point $B(4,-3)$ lies in the IV quadrant and plot it.

Now join the point A and point B using scale and extend it. We get a straight line.

7



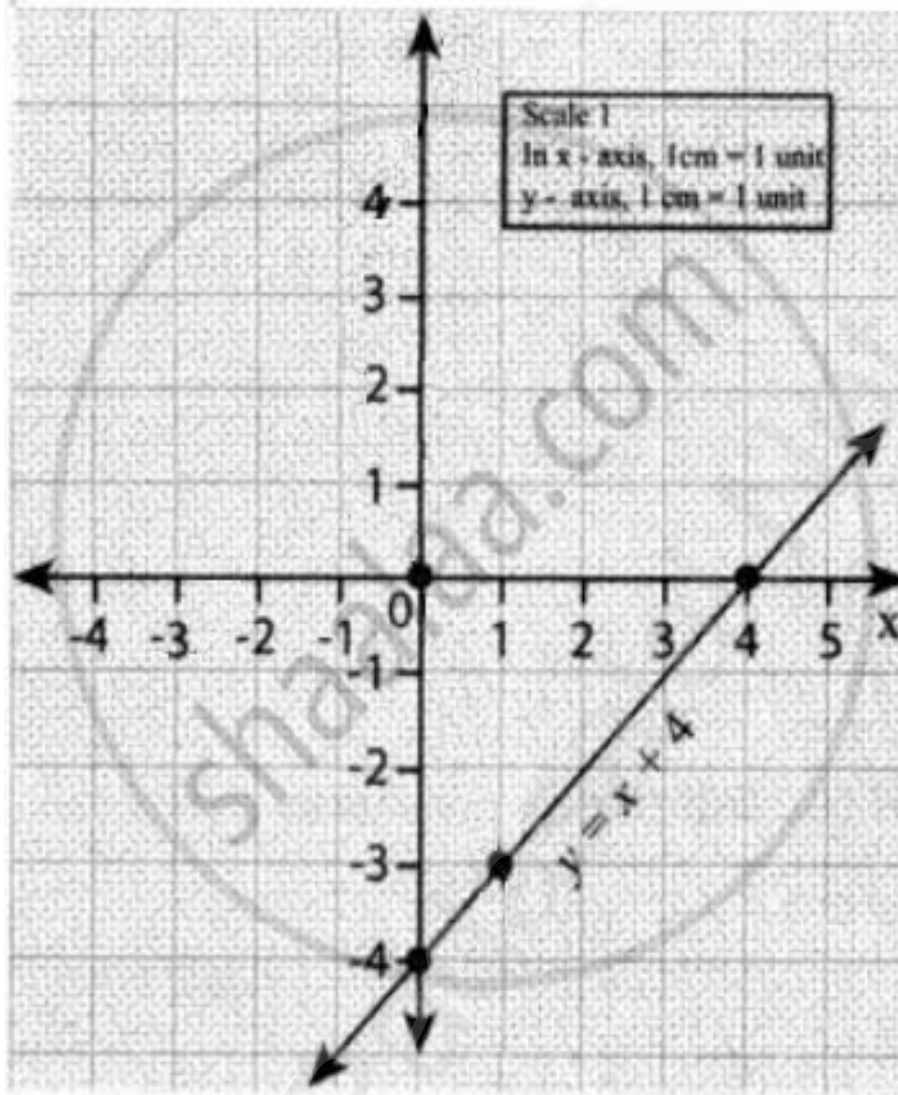
Note:

The straight line intersects X axis at (2,0) and Y axis at (0,3).

(or)

- B $y = x - 4$
for $y = x - 4$
put $x = 0$
 $y = 0 - 4 = -4$
 $\therefore (0, -4)$ is a point

$x = 4$
 $y = 4 - 4 = 0$
 $\therefore (4, 0)$ is a point



Answer key is Typed and Prepared by :

E.VIKRAM, M.Sc.,B.Ed(MATHEMATICS)

Department of Mathematics

Now I am working in Orange International Matric Hr.Sec.School

