







The sides of a quadrilateral ABCD are the tangents to a circle with centre O. If AB = 8cm and CD = 5cm then find AD + BC

- 28) write the formula to find the volume of a cone with radius 'h' and height 'r'
- 29) Expand and simplify :  $\Sigma x^2 + 2 \Sigma yz$
- 30)  $A = \begin{pmatrix} 3 & 4 \\ 5 & 6 \end{pmatrix}$  and  $B = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$  then find  $A + 2B$
- 31) Among 60 students 48 play throw ball and 27 play volley ball. If some of them play both, find the number of students who play only throw ball.
- 32) If  $U = \{ 0, 1, 2, 3, 4, 5, 6, 7, 8 \}$   $A = \{ \text{Multiples of 2} \}$   $B = \{ \text{factors of 6} \}$  Then find  $(A \cup B)'$  and represent it in Venn diagram.
- 33) If the third term and seventh term of an AP are 18 & 30. Find the sum of 17 terms.
- 34) If the AM and GM of two numbers are 5 and 4. Find the numbers
- 35) If  $\begin{pmatrix} 1 & 2 \\ 2 & 5 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$  then find the value of x & y
- 36) With an example show that  ${}^n C_r = {}^n C_{n-r}$
- 37) Simplify :  $\sqrt{50} - \sqrt{98} + \sqrt{162}$
- 38) Rationalize the denominator and simplify:  $\frac{\sqrt{3} + \sqrt{2}}{\sqrt{3} - \sqrt{2}}$



49) MOBILE ಪದದ ಅಕ್ಷರಗಳಿಂದ ಎಷ್ಟು ಪದಗಳನ್ನು ರಚಿಸಲು ಸಾಧ್ಯ? ಅವುಗಳಲ್ಲಿ ಎಷ್ಟು ಪದಗಳು  $\text{AgAPAgUA} \frac{1}{2} \text{AzA DgAA} \dots \text{AUeE} \frac{1}{2} \text{AAw} \text{A} \text{e} \text{?}$   
How many words can be formed using the letters of the word MOBILE ? How many of them begins with vowels ?

50) F PEVAVEA AVOPAVEA YAAAPAUVA AIAEAPA «ZAEE PAQA» r-Aj .  
Calculate the standard deviation of following data.

AAOAAvAgA (CI)	1 - 5	6 - 10	11 - 15	16 - 20
DAAEWJ ( f )	1	2	3	4

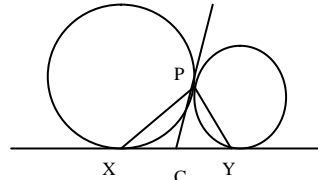
51) 2EEA WAvAZA JgAgAA OAEAEAQWAA AAA AC AA vAAU AC UA AA PA AA AV (a - 3) & (a<sup>3</sup> + a<sup>2</sup> - 17a + 15) DVAE. D JgAgAE WAvAZA OAEAEAQWAAEAA PAQA » r-Aj .  
The HCF & LCM of two 2nd degree expressions are (a - 3) & (a<sup>3</sup> + a<sup>2</sup> - 17a + 15). Find the expressions.

52)  $x + \frac{1}{x} = \sqrt{3}$  DzAUA  $x^3 + \frac{1}{x^3}$  EE PAQA » r-Aj  
If  $x + \frac{1}{x} = \sqrt{3}$  then find the value of  $x^3 + \frac{1}{x^3}$

53) MSAA AAQA AA vAAgAA AA AA CAZAA 8 Q. «AA GvAgAPEI ZA° 1 C° AZA YAEAAOPEI wgAAV 5 Q. «AA EAQZAA AA vAAEAEAA JqAPEI wgAAV 4 Q. «AA EAQZAA EAAvAgA YAAEA: JqAPEI 10 Q. «AA EAQZAG E CAAEA AEAgAI  
ಸ್ಥಳದಿಂದ ಕುಲಿರುವ ಸ್ಥಳಕ್ಕೆ ಇರುವ ಕನಿಷ್ಠ ದೂರ ವೆಷ್ಟು?

A man walks 8km due north then 5 km East and turns left then walk 4km and finally turns left and walk 10km. How far is he from starting point ?

54) avAZA° eXY & PC UA AA AEVAPEI JVEZA AAOPAUVA  
 $\angle XPY = 90^\circ$  JAZAA VEAEj 1  
In the figure, XY & PC are tangents to the circle.  
Prove that  $\angle XPY = 90^\circ$



55) MAZAA UAAUEAAvAgA EE rAA AEZA° AA EGA YAZAUVA AEVAOPEI AEZA° DgAA YAZAUVA AEVAOPEI EGA AA CEAA YAV 125:152 DzAgE AA AIAEA CEAA YAV PAQA » r.  
If the ratio between first three terms and first six terms of GP is 125 : 152. Find the common ratio.

56) AAAGAE ; wAAACUA » 1 tOUAA CAUA CEAGAEYA A EEAEABWUA AAUAOUAA CEAA YAVAZA gAAvAE.  
JOZAA ACi .  
Provet that area of similar triangles are proportional to square of their corresponding altitudes.

57)  $x^2 + 2x - 3 = 0$  AAAPAgAtzA EAPe © r 1 / Draw the graph of :  $x^2 + 2x - 3 = 0$

58) PEAAZAAVA EAQA EA CAVAgA 7 EA. «AA OUAWE wAAUA 4.5 EA. «AA AA vAAU 3.5 EA. «AA EGA AA JgAgAA AEVAUA 1/2 EEAgA AA AIAEA AAOPAUVAEAA JVE - Aj .  
Draw two circles of radii 4.5cm and 3.5cm with their centres 7cm apart. Construct DCT.

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- 12)  $(3 \pm \sqrt{2})$  AAUUAUAAEAAAB °EAEACgAAaA AUAAö A«AAPAgAt  
 Quadratic equation with roots  $(3 \pm \sqrt{2})$  is  
 A)  $x^2 + 6x - 7 = 0$       B)  $x^2 - 6x + 7 = 0$       C)  $x^2 + 6x - 7 = 0$       D)  $x^2 - 6x - 7 = 0$

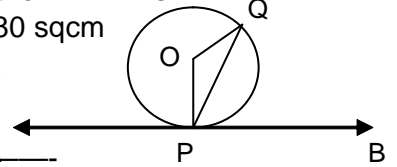
- 13) ಒಂದು ನಿರ್ದಿಷ್ಟ ವರ್ಗ ಸಮೀಕರಣದ ಪರವಲಯ ಮತ್ತು ಸರಳರೇಖೆಯ ನಕ್ಷೆಯಲ್ಲಿ ಸರಳರೇಖೆಯು  $(-3,9)$  ಮತ್ತು  $(1, 1)$  ಅಂಶಗಳಲ್ಲಿ ಪಾರಾಬೋಲನನ್ನು ಛೇದಿಸುತ್ತದೆ. ಆಗ ಸರಳರೇಖೆಯ ಸಮೀಕರಣವು  
 In a graph, straight line intersects the parabola at  $(-3,9)$  &  $(1, 1)$  Then the equation is  
 A)  $x^2 - 2x + 3 = 0$       B)  $x^2 + 2x - 3 = 0$       C)  $x^2 - 3x + 2 = 0$       D)  $x^2 - 2x - 3 = 0$

- 14) AB & CD ಎರಡು ಸಮಾನಾಂತರ ಚರ್ಮಗಳು. ಕೇಂದ್ರದಿಂದ AB ಚರ್ಮದ ದೂರ 3.5 ಸೆ.ಮೀ. ಆಗಿದ್ದರೆ AB & CD ನಡುವಿನ ದೂರ ಎಷ್ಟು?  
 AB & CD are two equal chords in a circle. If the distance from chord AB to the centre is 3.5 cm, then distance between AB & CD is  
 A) 7cm      B) 3.5cm      C) 4.5cm      D) 7.5cm

- 15)  $\Delta ABC \sim \Delta DEF$ .  $\frac{BC}{EF} = \frac{2}{5}$ .  $\Delta ABC$  ನ ವಿಸ್ತೀರ್ಣ 120 ಚ.ಸೆ.ಮೀ. ಆಗಿದ್ದರೆ  $\Delta DEF$  ನ ವಿಸ್ತೀರ್ಣ ಎಷ್ಟು?  
 $\Delta ABC \sim \Delta DEF$ ; If  $BC = 2.5$  and area of  $\Delta ABC = 120$  sq cm then  $\Delta DEF$  is

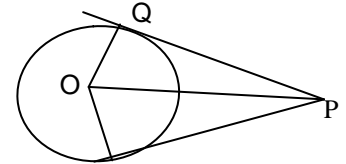
- A) 240 sqcm      B) 120 sqcm      C) 840 sqcm      D) 480 sqcm

- 16) O ಕೇಂದ್ರವಾಗಿರುವ ಒಂದು ವೃತ್ತದ ಒಂದು ತೇಲುವು APB ಇದೆ.  $\angle QPB = 60^\circ$  ಆಗಿದ್ದರೆ  $\angle PQO =$  \_\_\_\_\_  
 $\angle QPB = 60^\circ$  ಆಗಿದ್ದರೆ  $\angle PQO =$  \_\_\_\_\_



- In the figure, APB is a tangent. If  $\angle QPB = 60^\circ$  then  $\angle PQO =$  \_\_\_\_\_  
 A)  $60^\circ$       B)  $30^\circ$       C)  $90^\circ$       D)  $120^\circ$

- 17) ಒಂದು ಬಿಂದು P ನಿಂದ ವೃತ್ತಕ್ಕೆ ಎರಡು ತೇಲುಗಳಾದ PQ ಮತ್ತು PR ಇವೆ.  $\angle QPR = 50^\circ$  ಆಗಿದ್ದರೆ  $\angle QOP =$  \_\_\_\_\_  
 In the adjoining figure, PQ & PR are tangents.  
 If  $\angle QPR = 50^\circ$  then  $\angle QOP$  is \_\_\_\_\_  
 A)  $50^\circ$       B)  $65^\circ$       C)  $80^\circ$       D)  $130^\circ$



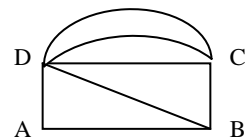
- 18) MAZEA wclA AAUAUUAJvAA«gAAaA AAAPAA AAUAUUA1° AqAgI UAVA WAENA®UAVA EAqAA«EA AASAZA  
 Relation between a cone and a cylinder with same radius and height is

- A) AAAPAA = 1° AqAgI      B) 3AAAPAA = 1° AqAgI      C) AAAPAA = 31° AqAgI      D) J®PAC Aj  
 A) cone = cylinder      B) 3 cone = cylinder      C) cone = 3 cylinder      D) All the above

- 19) MAZAA gEAE®gi EA YAZAZA aEAA-Ea «1tö 5 ZA.«AA EzE. CzAA 1000 ZA.«AA.«1töAAi MAZAA  
 aEAEZAEAAEAAAB YAEwö PAAÄA®A vEUZAAPEAEVA®A AAUAUUAUVA AASEa  
 The lateral surface area of a roller is 5sqm. Find the number of revolutions that it does to cover a field of 000 sqm

- A) 100      B) 200      C) 50      D) 500

- 20) F eA-APAEwAAÄ EAAUAUUAUVA®gAAaA AAUAUUAUVA®gAAaA  
 In the figure, number of odd nodes is \_\_\_\_\_  
 A) 3      B) 2      C) 1      D) 0



II 21)  $a & r$  are the first term and common ratio then  $S_{\infty}$  is 1x10

If  $a$  &  $r$  are the first term and common ratio then  $S_{\infty}$  is

22) Find the AM between 2 & 8

23)  $M = \begin{pmatrix} 5 & 6 \\ -1 & 2 \end{pmatrix}$  find  $M - M^{-1}$

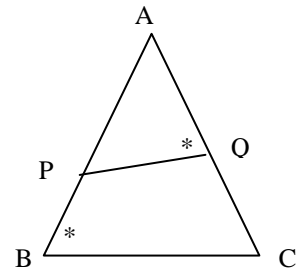
24) Write the formula to find the coefficient of Variation.

25)  $(6x - 12)$  &  $(6x^2 - 24)$  Find the LCM of  $(6x - 12)$  &  $(6x^2 - 24)$

26) Find the value of  $\sum m = 0$  if  $\sum m = 0$

27) Fill in the blank with suitable answer based on given figure.

$$\frac{AB}{AC} = \frac{AQ}{\square}$$



28) Calculate the breadth of a rectangle whose length and diagonal are 17cm and 15cm.

29) If two triangles are equiangular, then their corresponding sides are \_\_\_\_\_

30) Write the formula to find the lateral surface area of hemisphere.

III. 31)  $A = \{3, 4, 5, 6, 7\}$ ,  $B = \{4, 5, 6, 8\}$  &  $C = \{5, 6, 7, 8\}$  Draw the Venn diagram of  $A \cap (B \cup C)$

Given  $A = \{3, 4, 5, 6, 7\}$ ,  $B = \{4, 5, 6, 8\}$  &  $C = \{5, 6, 7, 8\}$

32) In a school day program 60% students participate in dance, 25% in drama and dance. Find the percentage of students who participate in drama only.

33) If  $T_3 = \frac{2}{17}$  &  $T_1 = \frac{2}{9}$  then find  $T_{10}$  of HP

34) 7 boxes are kept on a table. Kran put one marble in first box, 2 in II box, 4 in III box and so on. Find the total number of marble that are required to keep in boxes with same order.

35)  $A = \begin{pmatrix} 2 & 1 \\ 3 & 0 \end{pmatrix}$  find  $A^2 + A$









23)  $A = \begin{pmatrix} 0 & 2x \\ 6+x & 0 \end{pmatrix}$  is a skew symmetric matrix, then the value of 'x' is \_\_\_\_\_  
 ಒಂದು ವಿಷಮ ಸಮಮಿತಿ ಮಾತೃಕೆಯಾದರೆ 'x' ನ ಮೌಲ್ಯವು \_\_\_\_\_

24) IF A is an assumed mean. The value of actual mean can be found out by the formula

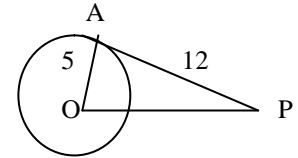
A JEABAZA CAZAdAA gAJ AIAAZhE dAAZA gAJ AIAEAB PAQA»RAIAAaA , KEVbe

25) HCF of :  $x^3 - 64$  and  $x^2 - 16$  is \_\_\_\_\_/

$(x^3 - 64)$  a AVAU  $(x^2 - 16)$  E a UMA aA . A.C. a AEA?

26) Using notation  $-x + y^2 - z + x^2 - x + z^2$  can be written as \_\_\_\_\_

$-x + y^2 - z + x^2 - x + z^2$  EAB , APAA GYAIIEAV<sup>1</sup> SgEZAUA --



27) In the figure AP tangent = 12cms, OA radius = 5cms, then the length of OP is \_\_\_\_\_

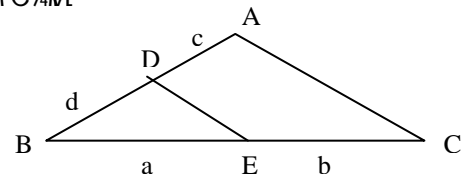
avLEP e AP , ADPA = 12cms a AVAU wch OA = 5cms Dz hE OP E A CVAE --

28) In the figure, AC || DE, then corollary of BPT

in terms of a,b,c & d is \_\_\_\_\_

a ME@ PIAEA AVMAIA GYMBAAIAZA YBaga

a,b,c a AVAU UMA EGA EA ASAZA SgE-Aj .



29) Total surface area of a cylinder is \_\_\_\_\_

MAZA 1° Aqj EA YKETO a AA-aa « 1° tō PAQA»RAIAAaA , KEVbe --

30) State converse of Pythagorean theorem/ YKAUFEAGA EA YBAAIAZA « -EA aA YBAAIA SgE

III. Answer the following / F PVAEP UMEAB Gvj<sup>1</sup>.

31)  $A = \{ r, a, t \}$ ,  $B = \{ c, a, t \}$  find  $A \cap B$  through Venn diagram.

$A = \{ r, a, t \}$ ,  $B = \{ c, a, t \}$  DZAU A∩B EAB a Ei avla a ME@PA VEAj<sup>1</sup>.

32) A florist has 110 champak flowers garlands. 50 off jasmine garlands and 30 of each. Find the total number of garlands with him.

MSa ME a ArUEA S½ 110 , A ; UE ME a EAB O EACGA a a AgUM a e 50 a A UE ME a EAB O EACGA a a AgUM a a AVAU 30 JgqA SUIA O KEUM EAB O EACGA a a AgUM KE E a e AUAZ hE C a ER gA a MI AO AgUM a ASi ಎಷ್ಟು ?

33)  $S_8 : S_4 = 97 : 81$  Find the common ratio. /  $S_8 : S_4 = 97 : 81$  Dz hE , A a AEA CEAVAVP EAB

PAQA»r-Aj .

34) In a HP, 4<sup>th</sup> term is  $\frac{1}{3}$  and 12<sup>th</sup> term is  $\frac{1}{27}$  Write the HP.

MAZA o gAVPA + Be AIA EA @ EA YZA  $\frac{1}{3}$  a AVAU 12 EA YZA  $\frac{1}{27}$  Dz hE o gAVPA + Be AIAEAB SgE-Aj .

35) Solve for 'x' :  $\begin{pmatrix} x^2 & 3 \\ 4 & 5 \end{pmatrix} - 2 \begin{pmatrix} x & 1 \\ -1 & 0 \end{pmatrix} = \begin{pmatrix} 0 & 1 \\ 6 & 5 \end{pmatrix}$  'x' E A 'E E PAQA»r-Aj .

36) Write the meaning of  ${}^n P_r$  and write the formula. /  ${}^n P_r$  Ez hA , KEVbe SgE

37) Find the product of  $\sqrt{3}$  and  $\sqrt[3]{2}$  /  $\sqrt{3}$  a AVAU  $\sqrt[3]{2}$  UA t @ Sp PAQA»r-Aj .

38) Solve the equation using formula:  $x^2 - 7x + 12 = 0$

$x^2 - 7x + 12 = 0$  EAB , KEVbe GYAIIEAV<sup>1</sup> ©r<sup>1</sup>.

39) Rationalize the denominator and simplify:  $\frac{2\sqrt{5}}{\sqrt{6} + 2}$   
 bAZA CP hA APj<sup>1</sup> , APAA<sup>1</sup> :



