

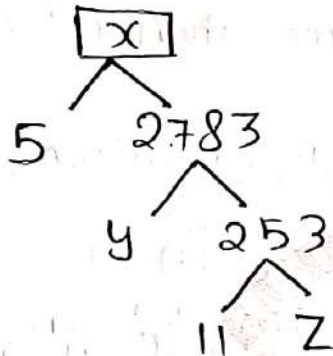
EMINENT TUTORIALS**DPP**Coaching Institute For Classes 9th to 12th**DAILY PRACTICE PROBLEM**Class **10th**Subject **MATH**No. of Questions

- 1) The exponent of 5 in prime factorisation of 3750 is (4)
- 2) The greatest number which when divides 1251, 9377 and 15628 leave remainders 1, 2, 3. is (625)
- 3) If a and b are two co-prime then a^3 and b^3 are.
- 4) If n is natural number, then $(2^n + 5^n)$ always end with. (2)
- 5) If $\text{HCF}(336, 54) = 6$, find $\text{LCM}(336, 54) = ?$ (3024)
- 6) Write the number of zeros in the end of a number whose prime factorisation $2^2 \times 5^3 \times 3^2 \times 17$. (2)
- 7) Write the smallest number which is divisible by both 306 and 657.
- 8) Find a rational number b/w $\sqrt{2}$ and $\sqrt{3}$
- 9) " " " " " $\sqrt{2}$ and $\sqrt{7}$.
- 10) What is the number z ? The LCM of z and 27 is 459. The HCF of z and 27 is 9. ($z = 153$)
- 11) HCF of 11008 and 7344. (ANS = 16)
- 12) If $d = \text{HCF}(48, 72)$, find $d = ?$ (ANS = 24)
- 13) If LCM of two numbers is 45 times their HCF and sum of HCF and LCM is 1150. Find HCF. (ANS = 25)

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15) Which natural number is neither composite nor prime?

16) If

Find x, y, z .

Ans.

$$\begin{cases} x = 13915 \\ y = 11 \\ z = 23 \end{cases}$$

17) HCF of two consecutive numbers is : (1)

18) If $2^3 \times 3^a \times b \times 7$ is prime factorisation of 2520 then $5a + 2b = ?$ a) 20 b) 15 c) 12 d) 1819) For some integer a , every odd integer is of the form: a) a b) $a+1$ c) $2a$ d) $2a+1$.20) If $\text{HCF}(26, 169) = 13$, $\text{LCM} = ?$ 21) If $a = 2^3 \times 3$, $b = 2 \times 3 \times 5$, $c = 3^n \times 5$ and $\text{LCM}(a, b, c) = 2^3 \times 3^2 \times 5$, then $n = ?$ 22) $\text{HCF}(216, 1176) = ?$

23) Express 429 as product of prime factors.

24) Prove that $\sqrt{3}$ is irrational no.25) If $p = ab^2$, $q = a^2b$ find HCF , LCM .

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- Q.26) If $(x-1)$ is a factor of $x^3 + ax^2 + 2b$.
and $(a+b) = 4$ then $a, b = ?$ ($a = -9, b = -5$)
- 27) If α, β are zero of $x^2 - (k+6)x + 2(2k-1)$ then
the value of k , if $\alpha + \beta = \frac{1}{2}\alpha\beta$, ($k = 7$)
- 28) If the sum of square of zero of $x^2 - 8x + k$
is 40. Find value of k . ($k = 12$)
- 29) If zero of $x^2 + 4x + 2a$ are α and $\frac{2}{\alpha}$ find a . ($a = 1$)
- 30) Find zero of $x^2 - 3x - m(m+3)$. ($-m, m+3$)
- 31) If α, β are zero of $x^2 - 4\sqrt{3}x + 3$, find $\alpha + \beta - \alpha\beta$. ($4\sqrt{3} - 3$)
- 32) Find zero of $x^2 - 2\sqrt{2}x$ and verify relationship
between root and coefficient. ($0, 2\sqrt{2}$)
- 33) If one of the zero of $(k-1)x^2 + kx + 1$ is -3 .
Find value of k . ($k = 4/3$)
- 34) If the zero of $x^2 + (a+1)x + b$ are 2 and -3
Find a, b . ($a = 0, b = -6$)
- 35) If one zero of $(k-1)x^2 + kx + 1$ is -4 . Find k . ($k = 5/4$)

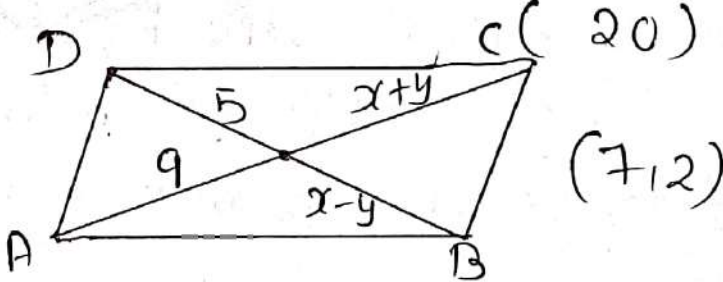
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- 36) If α, β be the roots of $2x^2 + 5x + k$, such that $\alpha^2 + \beta^2 + \alpha\beta = \frac{21}{4}$. Find k ($k = 2$).
- 37) If α, β are roots of $x^2 - 5x + c$ and $\alpha - \beta = 1$. Find value of c . ($c = 6$)
- 38) Find roots of $x^2 + \frac{x}{6} - 2$. ($\frac{4}{3}, -\frac{3}{2}$).
- 39) If α, β are roots of $x^2 - x - 4$, Find value of $(\frac{1}{\alpha} + \frac{1}{\beta} - \alpha\beta)$. ($15/4$)
- 40) If the product of roots of polynomial $(ax^2 - 6x - 6)$ is 4, Find value of a ($a = -3/2$).
- 41) If one root of $(a^2 + 9)x^2 + 13x + 6a$ is reciprocal of another find a . ($a = 3$)
- 42) If α, β are roots of $p(x) = x^2 - (k+6)x + 2(2k-1)$. Find value of k , if $\alpha + \beta = \frac{\alpha\beta}{2}$ ($k = 7$)
- 43) Find a quadratic polynomial whose roots are $5 - 3\sqrt{2}$ and $5 + 3\sqrt{2}$. ($x^2 - 10x + 7$)
- 44) If the sum of roots of polynomial $p(x) = (a+1)x^2 + (2a+3)x + (3a+4)$ is -1 . Find PoR ($= 2$)

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- Q: 45) The sum of zero of quadratic polynomial $2x^2 - 3k$ is (0)
- 46) If one zero of $(a^2 + a)x^2 + 13x + 6a$ is reciprocal of the other, find value of a . (\quad)
- 47) value of x and y in $32x + 33y = 34$ and $33x + 32y = 31$, $(-1, 2)$
- 48) In ΔABC , $\angle A = x^\circ$, $\angle B = (3x - 2)^\circ$, $\angle C = y^\circ$, and $\angle C - \angle B = 9^\circ$, the sum of greatest and smallest angle of triangle is. $(\text{Ans} = 107)$
- 49) value of k if line have many solution $kx + y = k^2$ and $x + ky = 1$. $(k = 1)$
- 50) Find k if line have many solution $kx + 3y + (3 - k) = 0$ and $12x + ky - k = 0$. $(k = 6)$
- 51) Solve the following equation $3x - 5y = 4$ $(\frac{9}{13}, \frac{-5}{13})$
 $2y + 7 = 9x$
- 52) Determine graphically the co-ordinate of the vertices of a triangle the equation of whose sides are given by $2y - x = 8$, $5y - x = 14$, $y - 2x = 1$
 $(-4, 2)$, $(1, 3)$, $(2, 5)$
A, B, C

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- 53) If $2x + y = 23$ and $4x - y = 19$ find value of $5y - 2x$ and $(\frac{y}{x} - 2)$. $(31, -5/7)$
- 54) Five years ago, the age of Jacob will be three times of his son. Five years ago, Jacob's age was seven times that of his son. What are their present ages? $(40, 10)$.
- 55) Yash scored 40 marks in a test, getting 3 marks for each right answer and losing 1 mark for each wrong answer. Had 4 marks been awarded for each correct answer and 2 marks been deducted for each incorrect answer, then total marks scored 50. How many questions were there in the test?
- 56) In given figure, ABCD is a parallelogram. Find value of x and y .
- 
- 57) How many solutions does equation $y = 0, y = -7$.
- 58) Solve for x and y : $0.4x - 1.5y = 6.5$ $(5, -3)$
 $0.3x + 0.2y = 0.9$
- 59) Solve for x and y : $47x + 31y = 63, 31x + 47y = 15$ $(2, -1)$

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- 60) Find k if equation have many solution.
 $2x - 3y = 7$, $(k+1)x + (1-2k)y = 5k-4$. ($k=5$)
- 61) Find k if equation have no solution
 $kx + 3y = k-2$, $12x + ky = k$ ($k = \pm 6$)
- 62) The sum of two digit number and the number obtained by reversing the order of its digits is 99. If the digit differ by 3. Find number. (36, 63)
- 63) If the pair of equation $ax + 2y = 7$ and $3x + by = 16$, represent parallel lines, then ab
- 64) If $2x - 3y = 7$ and $(a+b)x - (a+b-3)y = 4a+b$
- 65) solve for x and y in: $0.4x + 0.3y = 1.7$ and $0.7x + 0.2y = 0.8$
- 66) Find value of a and b if eqn. have many solution
 $(a+b)x - 2by = 5a+2b+1$ and $3x - y = 14$.
- 67) solve for x and y : $\frac{3}{2}x - y = \frac{1}{4}$ and $x + \frac{1}{2}y = 0$
- 68) The value of d , for which $(x^2 + 4x + d)$ is a perfect square. ($d = 4$).
- 69) If one zero of $x^2 + 3x + k$ is 2 find k . ($k = -10$)
- 70) Find root of quadratic equation
 $\sqrt{2}x^2 + 7x + 5\sqrt{2} = 0$ ($-\frac{5}{\sqrt{2}}, -\sqrt{2}$)

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- 71) If $x = \frac{2}{3}$ and $x = -3$ are roots of quadratic equation $ax^2 + 7x + b = 0$, find a, b ($a=3, b=-6$)
- 72) One root of $2x^2 - 8x - k = 0$ is $5/2$ find k ($k = -15/2$)
- 73) Using quadratic formula, Solve the equation
 $abx^2 + (b^2 - ac)x - bc = 0$ ($\frac{c}{b}, -b/a$)
- 74) $\frac{2x}{x-3} + \frac{1}{2x+3} + \frac{3x+9}{(x-3)(2x+3)} = 0$. Find x . ($-1, 3/2$)
- 75) Solve, $\frac{x+1}{x-1} \cdot \frac{x-1}{x+1} = \frac{5}{6}$, ($x = 5, -\frac{1}{5}$)
- 76) $\frac{1}{x+1} + \frac{3}{5x+1} = \frac{5}{x+4}$, solve for x . ($x = \frac{-11}{17}, 1$)
- 77) Find x in terms of a, b, c
 $\frac{a}{x-a} + \frac{b}{x-b} = \frac{2c}{x-c}$
- 78) The difference of two numbers is 5 and the difference of their reciprocal is $1/10$. Find no. ($10, 15$)
- 79) Write the discriminant of $(x+5)^2 = 2(5x-3)$.
- 80) Sumit is 3 times as old as his son. ($D = -124$)
 Five years later, he shall be two and half times

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as old as his son. Find their present age. (45)

81) Find k if roots are real and equal,
 $x^2 + k(2x + k - 1) + 2 = 0$. $k(2)$

82) In a flight of 600 km, an aircraft was slowed due to bad weather. Its average speed for the trip was reduced by 200 km/h and time of flight increased by 30 min. Find the original speed and duration of flight (600, 1)

83) Two taps together can fill a tank in 6 hours. The tap of larger diameter takes 9 hours less than the smaller one to fill the tank separately. Find time in which each tap can fill tank separately

84) A motor boat whose speed is 18 km/h in still water takes 1 hr. more to go 24 km upstream than to return downstream to same spot. Find speed of stream. (6 km/h)

85) Find the value of k , if $kx(x-2)+6$ have two equal roots. ($k=6$)

86) Find root of $3x^2 - 2\sqrt{3}x + 2 = 0$ ($\frac{\sqrt{2}}{\sqrt{3}}, \frac{\sqrt{2}}{\sqrt{3}}$)

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- 87) The ratio of sum and product of the roots of equation $7x^2 - 12x + 18 = 0$ is $(\text{Ans} = 2:3)$
- 88) Solve $4x^2 - 2(a^2 + b^2)x + a^2b^2 = 0$ $(\frac{a^2}{2}, \frac{b^2}{2})$
- 89) If -4 is root of $x^2 + px - 4 = 0$ and the equation $x^2 + px + q = 0$ has equal roots. Find b, q . $(3, 9/4)$
- 90) Find the discriminant of $\sqrt{5}x^2 - 7x + 2\sqrt{5} = 0$ (9)
- 91) If one root of $(k-1)x^2 - 10x + 3 = 0$ is the reciprocal of another find value of k . $(k=4)$
- 92) value of 'a', quadratic equation $3ax^2 - 6x + 1 = 0$ has no real roots. $(a > 3)$
- 93) Find k if roots are real and equal. $(k = \pm 3)$
- 94) If $x=2, x=3$ are roots of $3x^2 - 2mx + 2n = 0$ then find m and n . $(m = \frac{15}{2}, n = 9)$
- 95) solve for x ; $\frac{4}{x} - 3 = \frac{5}{2x+3}$
- 96) Find root of $\frac{1}{x+3} + \frac{1}{2x-1} = \frac{11}{7x+9}$ $(x=3, -17)$
- 97) If roots of $(a-b)x^2 + (b-c)x + (c-a) = 0$ are equal, prove that $b+c=2a$.

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- 98) The sum of a number and its reciprocal is $\frac{10}{3}$, find numbers. $(3, \frac{1}{3})$
- 99) Divide 12 into two parts such that sum of their square is 74. $(7, 5)$
- 100) Solve, $\frac{1}{a+b+x} = \frac{1}{a} + \frac{1}{b} + \frac{1}{x}$. $(x = -a, -b)$
- 101) A two digit number is such that product of its digit is 18. When 63 is subtracted from the numbers, the digits interchange their place, find the number. $(x = 9)$
- 102) The age of a man is twice the square of the age of his son. Eight years hence, the age of man will be 4 years more than three times the age of his son. Find their present age. $(4, 32)$
(Hint:- $x, 2x^2, 2x^2+8 = 3(x+8)+4$)
- 103) Solve, $\sqrt{6x+7} - (2x-7) = 0$
- 104) Solve, For x ; $\frac{x-4}{x-5} + \frac{x-6}{x-7} = \frac{10}{3}$

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- 105) If n^{th} term of AP is $(5n-2)$. Find
 a, d, a, a . (3, 5, 93)
- 106) The value of x for which $2x, (x+10)$ and
 $(3x+2)$ are in A.P. Find x . (x=6)
- 107) Find p for $(2p+1), 10, (5p+5)$ are in A.P. (p=2)
- 108) Common difference of $\frac{1}{p}, \frac{1-p}{p}, \frac{1-2p}{p}$ (-1)
- 109) Common difference of $\frac{1}{a}, \frac{3-a}{3a}, \frac{3-2a}{3a}$ (-1/3)
- 110) Find the number of terms in A.P.
 $18, 15\frac{1}{2}, 13, \dots, -47$. (27)
- 111) Find n^{th} term from end $5, 9, 13, \dots, 185$.
(n=153)
- 112) How many numbers between 200 and 500
are divisible by 8? (n=37)
- 113) $a, 7, b, 23, c$ are in AP. Find a, b, c (-1, 15, 31)
- 114) If m times the m^{th} term of AP is equal to
 n times its n^{th} term, show that the $(m+n)^{\text{th}}$
term of AP is zero.

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115) Solve the equation:

$$1 + 5 + 9 + 13 + \dots + x = 1326 \quad (x = 101)$$

116) If $S_n = 3n^2 - 4n$. Find n^{th} term $(6n - 7)$ 117) $a_5 = 13$, $a_{15} = -17$. Find $S_{21} = ?$ (-105) 118) Solve $1 + 4 + 7 + 10 + \dots + x = 287$ $(x = 40)$ 119) $S_4 = 40$ and $S_{14} = 280$, $S_n = ?$ $(n^2 + 6n)$ 120) Fill the missing $5, _, _, 9\frac{1}{2}$. $(6\frac{1}{2}, 8)$ 121) The angles of triangle are in A.P. The greatest angle is twice the least. Find the all angles of Δ . $(40^\circ, 60^\circ, 80^\circ)$ 122) The sum of three numbers is 21 and their product is 231. Find the no. $(3, 7, 11 \text{ or } 11, 7, 3)$ 123) If $b, c, 2b$ are in A.P. ratio of $b:c$.124) In an A.P., the sum of $\frac{3n^2}{2} + \frac{5n}{2}$. Find 25^{th} term $(2:3)$ 125) 10^{th} term of $\sqrt{3}, \sqrt{12}, \sqrt{27}, \dots$ is (76) 126) Find k , $k, 2k-1$ and $2k+1$ are in A.P.127) Find y , $y-7, y-2, y+3$ are in A.P.

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- 128) Find 15th term of $y-7, y-2, y+3, \dots$
- 129) 4th term from end of $-11, -8, -5, \dots, 49$.
- 130) Sum of n -odd natural no is (n^2)
- 131) GP point $A(-1, y)$ and $B(5, 7)$ lie on circle with centre $O(2, -3y)$. Find y . $(-1, 7)$
- 132) The ratio in which line $3x+y-9=0$ divides the line segment joining the point $(1, 3)$, $(2, 7)$ $(3:4)$
- 133) In what ratio did the line segment $P(-3, 2)$ and $Q(5, 7)$ divided by y -axis $(3:5)$
- 134) The distance between $(a \cos \theta + b \sin \theta, 0)$ and $(0, a \sin \theta - b \cos \theta)$ is $(\sqrt{a^2+b^2})$
- 135) Find value of x , if distance between $(0, 0)$ and $(x, -4)$ is 5 units. $(x = \pm 3)$
- 136) Find value of a if $(3, a)$ lies on line $2x-3y=5$ $(a = \frac{1}{3})$
- 137) The mid point of line joining $A(2a, 4)$, $B(-2, 3b)$ is $(1, 2a+1)$. Find a and b . $(a=2, b=2)$
- 138) Find ratio in which $P(4, m)$ divides the line segment joining $A(2, 3)$ and $B(6, -3)$. Find m $(1:1)$
 $(m=0)$

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- 139) If distance of $P(x, y)$ from $A(5, 1)$ and $B(-1, 5)$ are equal, prove that $3x = 2y$.
- 140) Find a point on y -axis which is equidistant from $(5, -2)$ and $(-3, 2)$. $(0, -2)$.
- 141) Three vertices of a parallelogram $ABCD$ are $A(1, 4)$, $B(-2, 3)$ and $C(5, 8)$. The co-ordinate of 4th vertex is.
- 142) If $A(3, \sqrt{3})$, $B(0, 0)$ and $C(3, k)$ are three vertices of an equilateral triangle $\triangle ABC$, then $k = ?$
($k = -\sqrt{3}$)
- 143) Point $A(3, 1)$, $B(5, 1)$, $C(a, b)$ and $D(4, 3)$ are vertices of a parallelogram $ABCD$. Find value of a and b .
($a = 6, b = 3$)
- 144) Find a relation between x and y , such that the point (x, y) is equidistant from $(7, 1)$ and $(3, 5)$.
($x - y = 2$)
- 145) Name the type of triangle with vertices $(\sqrt{2}, \sqrt{2})$, $(-\sqrt{2}, -\sqrt{2})$ and $(-\sqrt{6}, \sqrt{6})$.
- 146) If $A(-2, -2)$ and $B(2, -4)$ are and find the co-ordinate of P such that $AP = \frac{3}{7} AB$. Find P . $(-\frac{2}{7}, -\frac{26}{7})$
- 147) If $A(\frac{m}{3}, 5)$ is mid point of line segment joining $C(-6, 7)$ and $R(-2, 3)$. Find m . ($m = -12$)

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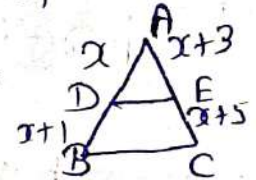
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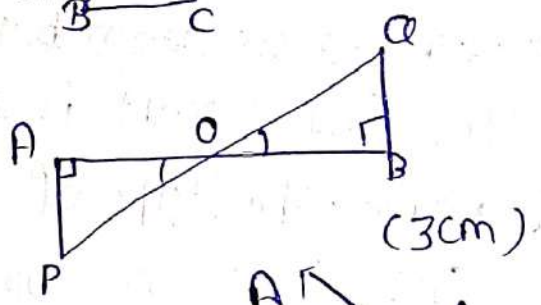
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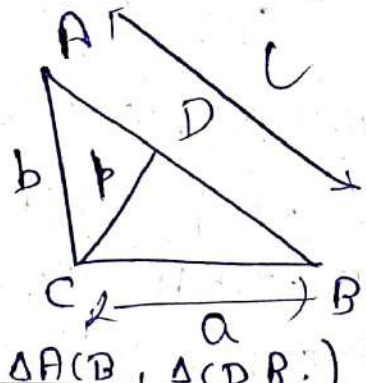
- 148) If the points A(4,3) and B(x,5) lie on a circle with centre O(2,3). Find x (x=2)
- 149) Find the centroid of triangle with vertex A(-1,0) B(5,-2), C(8,2) (4,1)
- 150) If A(6,-1), B(1,3) and C(k,8) are three points such that AB=BC. Find k (k=5-3)
- 151) If P(x,y) is equidistant from points A(6,-1) and B(2,3). Show that x-y=3.
- 152) State and prove BPT (Thales Theorem)
- 153) " " " converse of BPT.
- 154) In $\triangle ABC$, $DE \parallel BC$. Find x. (x=3)



- 155) If $\angle A = 90^\circ$, $\angle B = 90^\circ$, $OB = 4.5\text{cm}$, $OA = 6\text{cm}$, $AP = 4\text{cm}$, Find OB .



- 156) $\triangle ABC$ is right angle at C, if p is the length of \perp from C to AB and a, b, c length of $\angle A$, $\angle B$, $\angle C$ (side opposite) show that $\frac{1}{p^2} = \frac{1}{a^2} + \frac{1}{b^2}$ (Hint: $\triangle APC$, $\triangle CPB$)



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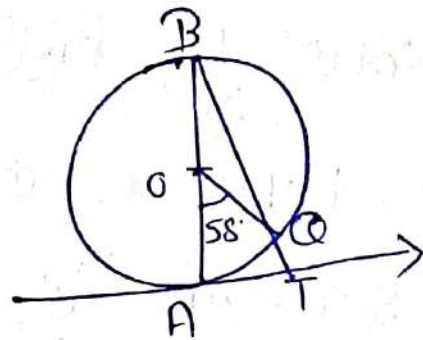
157) Prove that tangent drawn from an external point to a circle are always equal.

158) Two concentric circle of radius 10cm and 6cm. Find the length of the chord of larger circle which touches the smaller circle. (16cm)

159) $\triangle ABC$ is right triangle, right angle at B, with $BC = 6$ cm, $AB = 8$ cm. A circle with centre O and radius r has been inscribed in $\triangle ABC$. Find value of r . ($r = 2$)



160) If $AB = AC$ then prove that $BE = EC$

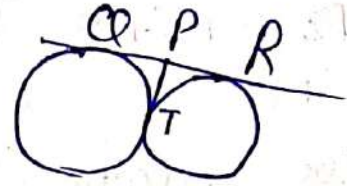


161) In fig. if AB is diameter of a circle with centre O and AT is tangent $\angle AOC = 58^\circ$ find $\angle ATO = ?$

162) PQ is chord of length 8cm of a circle of radius 5cm and centre O. The tangent P and Q intersect at T. The length of TP. ($\frac{20}{3}$)

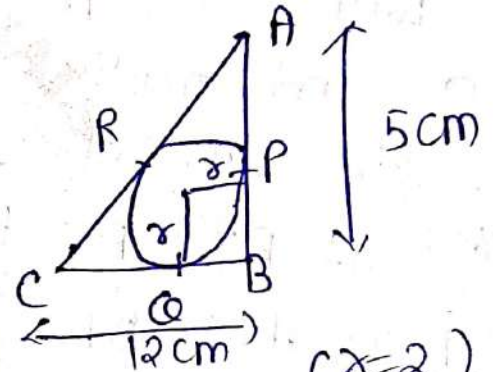
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- 163) If OR is common tangent to given circle, and $OP = 3.8$ cm
Find $OR = ?$



- 164) Two tangents making an angle of 60° between them are drawn to a circle of radius 3 cm,
Find length of each tangent. $(3\sqrt{3})$

- 165) In a right triangle, ABC
right angle at B . $BC = 12$ cm
 $AB = 5$ cm. Find radius of
circle inscribed in triangle.



- 166) If $\cot \theta = \frac{1}{\sqrt{3}}$, find value of $\sec^2 \theta + \operatorname{cosec}^2 \theta$ $(\theta = 2)$
 $(5\frac{1}{3})$

- 167) If $\tan \theta + \cot \theta = 2$, find $\sin^3 \theta + \cos^3 \theta = ?$ $(\frac{\sqrt{2}}{2})$

- 168) If $\sec \theta \cdot \sin \theta = 0$, find value of θ . $(\theta = 0)$

- 169) If $\sin \theta + \cos \theta = b$, $\sec \theta + \operatorname{cosec} \theta = a$, show that
 $a(b^2 - 1) = 2b$.

- 170) Find A and B if $\sin(A+2B) = \frac{\sqrt{3}}{2}$, $\cos(A+4B) = 0$

- 171) If $\sec \theta + \tan \theta = b$ find $\tan \theta = ?$ $(\frac{b^2 - 1}{2b})$

- 172) $x = 2 \sin^2 \theta$, $y = 2 \cos^2 \theta + 1$. Find $x + y$. $(\text{Ans} = 3)$

EMINENT TUTORIALS**DPP**Coaching Institute For Classes 9th to 12th**DAILY PRACTICE PROBLEM**Class 10thSubject MATHNo. of Questions 13

- 173) what is the value of $\left(\frac{1}{1+\cot^2\theta} + \frac{1}{1+\tan^2\theta}\right)$. (1)
- 174) If $\tan\theta = \sqrt{3}$, value of $\left(\frac{2\sec\theta}{1+\tan^2\theta}\right)$. (1)
- 175) If $\sin\theta + \cos\theta = \sqrt{3}$, prove that $\tan\theta + \cot\theta = 1$
- 176) Prove that:
 $(\sin\theta + \operatorname{cosec}\theta)^2 + (\cos\theta + \sec\theta)^2 = 7 + \tan^2\theta + \cot^2\theta$.
- 177) Prove that $\frac{1}{\operatorname{cosec}\theta + \cot\theta} - \frac{1}{\sin\theta} = \frac{1}{\sin\theta} - \frac{1}{\operatorname{cosec}\theta - \cot\theta}$
- 178) Prove that $\sqrt{\frac{\sec\theta - 1}{\sec\theta + 1}} + \sqrt{\frac{\sec\theta + 1}{\sec\theta - 1}} = 2 \operatorname{cosec}\theta$
- 179) If $4 \tan\theta = 3$; evaluate $\left(\frac{4\sin\theta - \cos\theta + 1}{4\sin\theta + \cos\theta - 1}\right)$. $\left(\frac{13}{11}\right)$
- 180) If $\angle A$ and $\angle B$ are acute angle and $\cos A = \cos B$
 show that $\angle A = \angle B$.
- 181) If $\sec\theta = x + \frac{1}{4x}$, find $(\sec\theta + \tan\theta) = ?$
- 182) Prove that $\sqrt{\frac{1+\sin A}{1-\sin A}} = \sec A + \tan A$
- 183) Prove that: $1 + \frac{\cot^2\alpha}{1+\operatorname{cosec}\alpha} = \operatorname{cosec}\alpha$.

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184) If $\sin\theta + \cos\theta = \sqrt{2} \cos\theta$, find value of $\tan\theta$ $(\sqrt{2}-1)$

185) If $\sin\alpha = \frac{1}{2}$, find $(3\cos\alpha - 4\cos^3\alpha) = ?$ (0)

186) If $\cot\theta = \frac{15}{8}$, find $\frac{(2+2\sin\theta)(1+\sin\theta)}{(1+\cos\theta)(2-2\cos\theta)} = \left(\frac{225}{64}\right)$

187) If $\tan\theta + \cot\theta = 5$ find $\tan^2\theta + \cot^2\theta = ?$ (23)

188) Prove that $\frac{\cos\theta}{1-\tan\theta} - \frac{\sin^2\theta}{\cos\theta - \sin\theta} = \cos\theta + \sin\theta$

189) Prove that

$$\frac{\operatorname{cosec}\theta + \cot\theta}{\operatorname{cosec}\theta - \cot\theta} = \frac{(\operatorname{cosec}\theta + \cot\theta)^2}{1} = 1 + 2\cot^2\theta + 2\operatorname{cosec}\theta \cot\theta$$

190) If $\left(\frac{x}{a} \sin\theta - \frac{y}{b} \cos\theta\right) = 1$ and $\left(\frac{x}{a} \cos\theta + \frac{y}{b} \sin\theta\right) = 1$

Prove that $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$

191) Evaluate: $\cot^2 30^\circ - 2\cos^2 30^\circ - \frac{3}{4} \sec^2 45^\circ - 4\sec^2 30^\circ$

192) If $\cos\theta - \sin\theta = x$, $\sin\theta + \cos\theta = y$. $(\text{Ans} = 2)$

Find $x^2 + y^2 = ?$

193) If $\cos\theta - \sin\theta = x$, $\sin\theta + \cos\theta = y$.

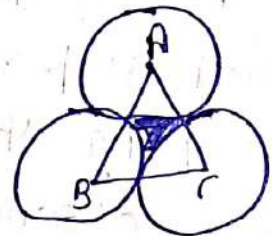
Show that $x^2 + y^2 = 2$.

EMINENT TUTORIALS**DPP**Coaching Institute For Classes 9th to 12th**DAILY PRACTICE PROBLEM**Class **10th**Subject **MATH**No. of Questions **10**

- 194) The area of a quadrant of circle whose circumference is 176 cm (616 cm²)
- 195) The minute hand of a clock is 8 cm long. The distance covered by tip of min. hand from 10:10 am to 10:25 am is (132 cm)
- 196) The cost of fencing a circular field at the rate of ₹ 24 per meter is ₹ 5280. The field is to be ploughed at rate of ₹ 0.50 per m². Find the cost of ploughing the field. (1925)
- 197) A car has 2 wipers which do not overlap. Each wiper has a blade of length 25 cm. Sweeping through an angle of 120°. Find the total area cleaned by blades.
- 198) The perimeter of circle is 242 m. Find area (4658.5)
- 199) Area of circle is 49π cm². Find circumference (14π)
- 200) A race track is in the form of a ring whose inner and outer circumference are 437 m and 503 m. Find width of track.
- 201) A circular park, 42 m in diameter, has a path 3.5 m wide running round it on the outside. Find the cost of gravelling the path at ₹ 20 m² (₹ 10010)

EMINENT TUTORIALS**DPP**Coaching Institute For Classes 9th to 12th**DAILY PRACTICE PROBLEM**Class 10thSubject MathNo. of Questions

- 202) If the circumference of two concentric circle forming a ring 88cm and 66cm. Find width of ring. (Ans = 3.5cm)
- 203) Two circle touches externally. The sum of their area is 130π sq.cm and the distance between their centre is 14cm. Find radius of circle. (3, 11cm)
- 204) A field is in the form of a circle. The cost of ploughing the field at ₹15 per m². is 57750. Find the cost of fencing the field at ₹34 per m. (₹ 7480)
- 205) The area of equilateral triangle is $49\sqrt{3}$ cm². Taking each angular point as centre, circle are drawn with radius equal to half the length of the side of triangle. Find the area of the triangle not included in the circle.
- 206) A tool is prepared out of a circular metallic disc of radius 14cm by taking 2 semicircle parts of radius 7cm. each from the two sides as in figure. Find area of the metal used in making 50 such tools.



EMINENT TUTORIALS**DPP**Coaching Institute For Classes 9th to 12th**DAILY PRACTICE PROBLEM**Class Subject No. of Questions

- 207) If the area of a sector of a circle is $\frac{5}{18}$ of the area of that circle. Find central angle of sector.
- 208) Two right circular cones have their heights in ratio 1:3 and radii in the ratio 3:1. What is the ratio of their volume?
- 209) The sum of the radius of base and height of a solid right cylinder is 37 cm. If the total surface area of solid cylinder is 1628 cm^2 . Find volume of the cylinder. (4620 cm^3)
- 210) Find the dimensions of a rectangular park whose perimeter is 60 m and area 200 m^2 . (10, 20)
- 211) Find the volume of the largest right cone that can be cut from a cube of edge 4.2 cm (Ans = 19.404)
- (Hint: $r = \frac{4.2}{2}$, $h = 4.2 \text{ cm}$)
- 212) Volume of two spheres are in ratio 64:27. Find ratio of their surface area. (16:9)
- 213) If volume of cube is 1728 cm^3 . Then length of its edge is (Ans = 12 cm)
- 214) Three cubes of volume 27 cm^3 each are joined end to end to form a solid. Find surface

EMINENT TUTORIALS**DPP**Coaching Institute For Classes 9th to 12th**DAILY PRACTICE PROBLEM**Class **10th**Subject **MATH**No. of Questions area of the cuboid is formed. ($SA = 126 \text{ cm}^2$)215) The radius and height of a cylinder are in ratio 5:7 and its volume is 550 cm^3 . Find radius.216) If the mean of n natural numbers is 15. Find n . ($n = 29$)217) Using the empirical formula, find the mode of whose mean is 8.32 and median is 8.05 (7.51)
(Hint: - $1 \text{ mode} + 2 \text{ mean} = 3 \text{ median}$)

218) Find mode.

CI	0-20	20-40	40-60	60-80	80-100	100-120	120-140
f_i	6	8	10	12	6	8	3

($n = 65$)

219) Find value of p . if mean is 7.5.

CI	2-4	4-6	6-8	8-10	10-12	12-14
f_i	6	8	15	p	8	4

($p = 3$)

220) If median of data is 16 find a and b .

CI	0-5	5-10	10-15	15-20	20-25	25-30	30-35	35-40
f_i	12	a	12	15	b	6	6	4

sum of all $f_i = 70$ (0 = 8, $b = 7$)221) If mode = 67 find x .

CI	40-50	50-60	60-70	70-80	80-90
f_i	5	x	15	12	7

(x = 8)

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Q.222) If mean of given data is 53 find k

CI	0-20	20-40	40-60	60-80	80-100	k(28)
f _i	12	15	32	k	13	

Q.223) If the median of data = 32.5 find f₁, f₂

CI	0-10	10-20	20-30	30-40	40-50	50-60	60-70	Total
f _i	f ₁	5	9	12	f ₂	3	2	40

Q.224) If $\sum f_i = 17$, $\sum f_i x_i = 4p + 63$, $\bar{x} = 7$, (f₁=3, f₂=6)
p=? (p=14)Q.225) The mean of 25 observations is 36. If mean of first 13 is 32 and last 13 is 39. Find 13th observation. (23)Q.226) If the value of mean and median are 26.4, 27.2
Find mode. (28.8)

Q.227) Find mean.

CI	1-3	4-6	7-9	10-12	13-15
f _i	25	22	52	45	16

mean = 8.09

Q.228) If P(E) + P(\bar{E}) = x, Find $x^2 - 3$. (-2)

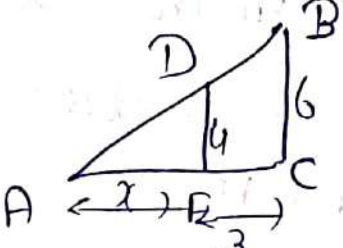
Q.229) A number is chosen from -3, -2, -1, 0, 1, 2, 3

what will the probability that square of this number is less than or equal to 1. (3/7)

EMINENT TUTORIALS**DPP**Coaching Institute For Classes 9th to 12th**DAILY PRACTICE PROBLEM**Class 10thSubject MATHNo. of Questions

- 230) The probability of selecting a rotten apple randomly from a heap of 900 apple is 0.18. What is the probability of rotten apple in the heap? $(\frac{18}{100})$
- 231) Find the probability that a leap year selected at random will contain 53 Sunday and 53 Monday. $(\frac{1}{7})$
- 232) If a number x is chosen at random from the numbers $-3, -2, -1, 0, 1, 2, 3$. Find probability of $x^2 < 4$ $(\frac{3}{7})$
- 233) Cards number 7 to 40 were put in a box. Pournam selects a card at random. What is the probability that Pournam select a card which is a multiple of 7? $(\frac{5}{34})$
- 234) Find the probability that a number selected at random from number 3, 4, 4, 4, 5, 5, 6, 6, 6, 7 will be their mean? $(\frac{1}{5})$
- 235) In a single throw of pair of dice. What is the probability (i) prime number on both dice (ii) total of 9 or 11. $(\frac{1}{4}, \frac{1}{6})$

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- 236) Three coins are tossed. Find probability of
 i) exactly two heads ii) at least two heads
 iii) at least two tails.
- 237) A number x is selected at random from the numbers 1, 2, 3 and 4. Another number y is selected at random from 1, 4, 9, 16. Find the probability that product x and y is less than 16.
- 238) HCF = 27, LCM = 162, one no = 54. Find 2nd no. (81)
- 239) GP & AP are equal to P.O.R. of $kx^2 + 2x + 3k$. Find k . (-4/3)
- 240) In an A.P. if $d = -4$, $n = 7$, $a_n = 4$ Find (28)
- 241) $DE \parallel BC$, Find AE find $x = 6$.
- 
- 242) A number is selected at random from 1 to 100. Probability that it is prime (1/4)
- 243) The area of largest circle that can be drawn inside a rectangle with side $7\text{m} \times 3.5\text{m}$ is. ($77/8\text{m}^2$)

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- 244) Distance of $(5, 0)$ and $(-12, 0)$ is (17)
- 245) Find mean, if mode 50.5, median 45.5
(43)
- 246) Prove that $7\sqrt{2}$ is irrational no.
- 247) If one zero of polynomial $p(x) = (k^2 + 16)x^2 + 8x + 8k$ is reciprocal of another find k . ($k = 4$)
- 248) If α, β are zero of $2x^2 - 3x + 5 = 0$.
Find value of $\alpha^2\beta + \beta^2\alpha$. ($15/4$)
- 249) A bag contain 5 red ball and some blue balls. If the probability of drawing a blue ball from bag is twice that of red ball. Find no of blue ball in the bag. (15)
- 250) If $x = 2, x = 3$ are roots of $3x^2 - 2kx + 2m = 0$
Find k and m . ($k = \frac{15}{2}, m = 9$)
- 251) A chord of circle of diameter 30cm subtend an angle of 60° at the centre. Find area of corresponding segment of circle
($\pi = 3.14, \sqrt{3} = 1.73$)
(39.9 cm^2)