

MONOMATH

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CBSE Class 12 Mathematics

Previous Year Questions (2016 - 2025)

Chapter-wise Compilation with Year & Marks

Based on CBSE Board Question Papers

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15+ Years Teaching Experience

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Note: All questions are from CBSE Class 12 Mathematics Board Examinations (2016-2025).

Chapter 1: Relations and Functions

1 Mark Questions

Q1. If $f(x) = x^3$, find $f^{-1}(8)$.

[2020]

Q2. State whether $f: \mathbb{R} \rightarrow \mathbb{R}$ given by $f(x) = x^2$ is one-one or not.

[2019]

Q3. If $f(x) = 2x + 3$, find $f^{-1}(x)$.

[2018]

Q4. Check whether the relation $R = \{(1,1), (2,2), (3,3)\}$ on set $\{1,2,3\}$ is reflexive.

[2022]

2 Marks Questions

Q5. Show that the function $f: \mathbb{R} \rightarrow \mathbb{R}$ given by $f(x) = x^3$ is injective.

[2020]

Q6. Check whether the relation $R = \{(a,b): a \leq b^3\}$ on $\mathbb{R}$ is reflexive, symmetric or transitive.

[2019]

Q7. If $f(x) = (4x+3)/(6x-4)$, $x \neq 2/3$, find $f \circ f(x)$.

[2018]

Q8. Prove that the function $f: \mathbb{R} \rightarrow \mathbb{R}$ given by $f(x) = 2x$ is one-one and onto.

[2023]

3 Marks Questions

Q9. Check whether the relation R in $\mathbb{R}$ defined by $R = \{(a,b): a \leq b^3\}$ is reflexive, symmetric or transitive.

[2022]

Q10. Show that the function $f: \mathbb{R} \rightarrow \mathbb{R}$ given by $f(x) = 4x + 3$ is invertible. Find f^{-1} .

[2020]

Q11. Let $A = \{1,2,3\}$, $B = \{4,5,6,7\}$ and let $f = \{(1,4), (2,5), (3,6)\}$ be a function from A to B . Show that f is one-one and not onto.

[2019]

Q12. If $f: \mathbb{R} \rightarrow \mathbb{R}$ defined by $f(x) = (3-x^3)^{1/3}$, find $f \circ f(x)$.

[2018]

5 Marks Questions

Q13. Prove that the function $f: \mathbb{N} \rightarrow \mathbb{N}$ given by $f(x) = 2x$ is one-one but not onto.

[2024]

Q14. Consider $f: \mathbb{R} \rightarrow \mathbb{R}$ given by $f(x) = 4x + 3$. Show that f is invertible. Find f^{-1} .

[2017]

Q15. Let $f: \mathbb{N} \rightarrow \mathbb{N}$ defined by $f(n) = n+1$ if n is odd, $n-1$ if n is even. Show that f is bijective.

[2016]

Chapter 2: Inverse Trigonometric Functions

1 Mark Questions

Q1. Find the principal value of $\sin^{-1}(1/2)$.

[2020]

Q2. Find the principal value of $\tan^{-1}(\sqrt{3})$.

[2019]

Q3. Find the principal value of $\cos^{-1}(-\sqrt{3}/2)$.

[2018]

Q4. Find the principal value of $\operatorname{cosec}^{-1}(2)$.

[2022]

Q5. Find the principal value of $\sec^{-1}(2/\sqrt{3})$.

[2017]

2 Marks Questions

Q6. Prove that $\sin^{-1}(x) + \cos^{-1}(x) = \pi/2$ for x in $[-1, 1]$.

[2020]

Q7. Find the value of $\tan^{-1}(1) + \cos^{-1}(-1/2) + \sin^{-1}(-1/2)$.

[2019]

Q8. Prove that $\tan^{-1}(1/2) + \tan^{-1}(1/3) = \pi/4$.

[2023]

3 Marks Questions

Q9. Prove that $2\tan^{-1}(1/3) + \tan^{-1}(1/7) = \pi/4$.

[2022]

Q10. Solve: $\tan^{-1}(x+1) + \tan^{-1}(x-1) = \tan^{-1}(8/31)$.

[2020]

Q11. Solve: $\tan^{-1}(2x) + \tan^{-1}(3x) = \pi/4$.

[2019]

Q12. Prove that $\tan^{-1}(2/11) + \tan^{-1}(7/24) = \tan^{-1}(1/2)$.

[2018]

5 Marks Questions

Q13. Prove that $2\tan^{-1}(1/5) + \tan^{-1}(1/7) + 2\tan^{-1}(1/8) = \pi/4$.

[2024]

Q14. Solve: $\sin^{-1}(6x) + \sin^{-1}(6\sqrt{3}x) = -\pi/2$ if $x < 0$.

[2017]

Q15. Prove that $\tan^{-1}\left(\sqrt{\frac{1-x}{1+x}}\right) = \frac{1}{2}\cos^{-1}x$, $-1 < x < 1$.

[2016]

Chapter 3: Matrices

1 Mark Questions

Q1. If $A = [a_{ij}]$ is a 2×3 matrix such that $a_{ij} = i + j$, find A .

[2020]

Q2. If $A = [a_{ij}]$ is a 3×3 diagonal matrix with $a_{ii} = 2$, find A .

[2019]

Q3. For what value of x , the matrix $\begin{bmatrix} 4 & 4 \\ x & 1 \end{bmatrix}$ is singular?

[2018]

Q4. If $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$, find A^T .

[2022]

2 Marks Questions

Q5. If $A = \begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$, show that $A^2 - 5A + 7I = 0$.

[2020]

Q6. If $A = \begin{bmatrix} 1 & 2 \\ 2 & 1 \end{bmatrix}$, show that $A^2 - 2A - 3I = 0$.

[2019]

Q7. Find X if $2X + \begin{bmatrix} 3 & 4 \\ 5 & 6 \end{bmatrix} = \begin{bmatrix} 7 & 8 \\ 9 & 10 \end{bmatrix}$.

[2023]

3 Marks Questions

Q8. If $A = \begin{bmatrix} 1 & 2 & 3 \\ 3 & -2 & 1 \\ 4 & 2 & 1 \end{bmatrix}$, show that $A^3 - 23A - 40I = 0$.

[2022]

Q9. Find matrices A and B if $2A + B = \begin{bmatrix} 1 & -1 \\ 0 & 2 \end{bmatrix}$ and $A - 3B = \begin{bmatrix} 4 & 0 \\ -1 & 1 \end{bmatrix}$.

[2020]

Q10. If $A = \begin{bmatrix} \cos a & \sin a \\ -\sin a & \cos a \end{bmatrix}$, show that $A^n = \begin{bmatrix} \cos na & \sin na \\ -\sin na & \cos na \end{bmatrix}$.

[2019]

5 Marks Questions

Q11. Express the matrix $\begin{bmatrix} 3 & 3 & -1 \\ -2 & -2 & 1 \\ -4 & -5 & 2 \end{bmatrix}$ as the sum of a symmetric and a skew-symmetric matrix.

[2024]

Q12. If $A = \begin{bmatrix} 2 & 0 & 1 \\ 2 & 1 & 3 \\ 1 & -1 & 0 \end{bmatrix}$, find $A^2 - 5A + 4I$ and hence find A^{-1} .

[2017]

Q13. If $A = \begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$, show that $A^2 - 5A + 7I = 0$. Hence find A^{-1} .

[2016]

Chapter 4: Determinants

1 Mark Questions

Q1. If $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$, find $|A|$.

[2020]

Q2. Evaluate: $\begin{vmatrix} 2 & 3 \\ 4 & 5 \end{vmatrix}$.

[2019]

Q3. If A is a 3×3 matrix with $|A| = 5$, find $|\text{adj } A|$.

[2018]

Q4. If $\begin{vmatrix} x & 2 \\ 3 & 4 \end{vmatrix} = 2$, find x .

[2022]

2 Marks Questions

Q5. If $A = \begin{bmatrix} 1 & 2 & 3 \\ 2 & 3 & 2 \\ 3 & 3 & 4 \end{bmatrix}$, find $|\text{adj } A|$.

[2020]

Q6. Find x if $\begin{vmatrix} x & 1 & 2 \\ 2 & 0 & 1 \\ 1 & 2 & 0 \end{vmatrix} = 0$.

[2019]

Q7. Using properties of determinants, prove that $\begin{vmatrix} a & b & c \\ a^2 & b^2 & c^2 \\ b+c & c+a & a+b \end{vmatrix} = (a-b)(b-c)(c-a)(a+b+c)$.

[2023]

3 Marks Questions

Q8. Using properties of determinants, prove that $\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ a^3 & b^3 & c^3 \end{vmatrix} = (a-b)(b-c)(c-a)(a+b+c)$.

[2022]

Q9. Using properties of determinants, solve for x : $\begin{vmatrix} x+a & x & x \\ x & x+b & x \\ x & x & x+c \end{vmatrix} = 0$.

[2020]

Q10. If $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$, find A^{-1} using adjoint method.

[2019]

5 Marks Questions

Q11. If $A = \begin{bmatrix} 1 & 2 & 0 \\ -2 & -1 & -2 \\ 0 & -1 & 1 \end{bmatrix}$, find A^{-1} and hence solve: $x+2y = 10$, $-2x-y-2z = -8$, $-y+z = 7$.

[2024]

Q12. Solve system of equations using matrix method: $3x+4y+5z=18$, $2x-y+8z=13$, $5x-2y+7z=20$.

[2017]

Q13. If $A = \begin{bmatrix} 2 & -3 & 5 \\ 3 & 2 & -4 \\ 1 & 1 & -2 \end{bmatrix}$, find A^{-1} . Using A^{-1} , solve: $2x-3y+5z=11$, $3x+2y-4z=-5$,

$$x+y-2z=-3.$$

[2016

Chapter 5: Continuity and Differentiability

1 Mark Questions

Q1. If $f(x) = |x|$, check the continuity of f at $x=0$.

[2020]

Q2. Find dy/dx if $y = \log(\sin x)$.

[2019]

Q3. Differentiate $\sin(\cos x)$ w.r.t. x .

[2018]

Q4. Find dy/dx if $y = e^{2x} \sin 3x$.

[2022]

2 Marks Questions

Q5. Find dy/dx if $y = (\log x)^{\sin x}$.

[2020]

Q6. Find dy/dx if $y = x^{\log x}$.

[2019]

Q7. Find dy/dx if $x = a \sec \theta$, $y = b \tan \theta$.

[2023]

Q8. Differentiate $\tan^{-1}((1+\cos x)/\sin x)$ w.r.t. x .

[2018]

3 Marks Questions

Q9. If $y = (\tan^{-1} x)^2$, show that $(1+x^2)^2 y_2 + 2x(1+x^2) y_1 = 2$.

[2022]

Q10. If $x = a(\cos t + t \sin t)$ and $y = a(\sin t - t \cos t)$, find d^2y/dx^2 .

[2020]

Q11. Differentiate $x^{\sin x} + (\sin x)^{\cos x}$ w.r.t. x .

[2019]

Q12. If $y = (\sin^{-1} x)^2$, prove that $(1-x^2) y_2 - x y_1 = 2$.

[2018]

5 Marks Questions

Q13. If $y = e^{m \cos^{-1} x}$, prove that $(1-x^2) y_2 - x y_1 - m^2 y = 0$.

[2024]

Q14. If $x = a \cos^3 \theta$, $y = a \sin^3 \theta$, find d^2y/dx^2 at $\theta = \pi/6$.

Chapter 6: Application of Derivatives

1 Mark Questions

Q1. Find the rate of change of area of a circle w.r.t. its radius r when $r=3$.

[2020]

Q2. Find the slope of tangent to the curve $y = x^3 - x + 1$ at $x = 1$.

[2019]

Q3. Find the equation of tangent to $y = x^2$ at $(1,1)$.

[2018]

Q4. The total cost $C(x) = 0.005x^3 - 0.02x^2 + 30x + 5000$. Find marginal cost when $x=3$.

[2022]

2 Marks Questions

Q5. Find the intervals in which $f(x) = 2x^3 - 15x^2 + 36x + 1$ is increasing.

[2020]

Q6. Find the maximum and minimum values of $f(x) = \sin x + \cos x$ on $[0, 2\pi]$.

[2019]

Q7. Find two numbers whose sum is 24 and product is maximum.

[2023]

3 Marks Questions

Q8. A ladder 5 m long is leaning against a wall. The bottom slides away at 2 cm/s. How fast is the top sliding down when bottom is 4 m from wall?

[2022]

Q9. Find the maximum area of an isosceles triangle inscribed in a circle of radius a .

[2020]

Q10. Find the equation of tangent to the curve $y = x^3 - 2x + 6$ which is parallel to the line $x + 14y + 4 = 0$.

[2019]

5 Marks Questions

Q11. Find the dimensions of the rectangle of maximum area that can be inscribed in a circle of radius R .

[2024]

Q12. Show that the rectangle of maximum area for a given perimeter is a square.

[2017]

Q13. A tank with rectangular base and rectangular sides, open at top is to be constructed such that depth

= 2m and volume = $8m^3$. If building of tank costs Rs 70 per m^2 for base and Rs 45 per m^2 for sides, find the least cost.

[2016

Chapter 7: Integrals

1 Mark Questions

Q1. Evaluate $\int x^2 dx$.

[2020]

Q2. Evaluate $\int \sin x dx$.

[2019]

Q3. Find $\int e^{2x} dx$.

[2018]

Q4. Evaluate $\int 1/x dx$.

[2022]

2 Marks Questions

Q5. Evaluate $\int x \sin x dx$.

[2020]

Q6. Evaluate $\int \log x dx$.

[2019]

Q7. Evaluate $\int \sin^2 x dx$.

[2023]

Q8. Evaluate $\int x e^x dx$.

[2018]

3 Marks Questions

Q9. Evaluate $\int x^2 \log x dx$.

[2022]

Q10. Evaluate $\int (x \sin^{-1} x) / \sqrt{1-x^2} dx$.

[2020]

Q11. Evaluate $\int dx / (x^2 - 6x + 13)$.

[2019]

Q12. Evaluate $\int_0^{\pi/2} \sqrt{\sin x} / [\sqrt{\sin x} + \sqrt{\cos x}] dx$.

[2018]

5 Marks Questions

Q13. Evaluate $\int_0^1 x \log(1+2x) dx$.

[2024]

Q14. Evaluate $\int_0^{\pi} (x \sin x) / (1 + \cos^2 x) dx$.

[2017]

Q15. Find $\int \frac{(x^2+1)}{(x^2+2)(x^2+3)} dx$.

[2016]

Chapter 8: Application of Integrals

2 Marks Questions

Q1. Find the area enclosed by the circle $x^2 + y^2 = a^2$.

[2020]

Q2. Find the area bounded by $y = x^2$ and the x-axis between $x=0$ and $x=2$.

[2019]

Q3. Find the area of the region bounded by $y^2 = 4ax$ and its latus rectum.

[2023]

3 Marks Questions

Q4. Find the area bounded by the parabola $y = x^2$ and the line $y = x$.

[2022]

Q5. Find the area bounded by $y = x^2$ and $y = 4$.

[2020]

Q6. Find the area of the region bounded by the ellipse $x^2/16 + y^2/9 = 1$.

[2019]

5 Marks Questions

Q7. Find the area of the region bounded by the curves $y = x^2 + 2$ and $y = x$, $x=0$ and $x=3$.

[2024]

Q8. Find the area bounded by the curves $(x-1)^2 + y^2 = 1$ and $x^2 + y^2 = 1$.

[2017]

Q9. Find the area of the region bounded by $y^2 = 4x$ and $x^2 = 4y$.

[2016]

Chapter 9: Differential Equations

1 Mark Questions

Q1. Find the order and degree of $(d^2y/dx^2)^3 + (dy/dx)^2 + \sin(dy/dx) = 0$.

[2020]

Q2. Form the differential equation of $y = A \cos x + B \sin x$.

[2019]

Q3. Find the integrating factor of $dy/dx + y \tan x = \sec x$.

[2018]

Q4. Find the order of differential equation: $d^2y/dx^2 + 3(dy/dx)^2 = x \log x$.

[2022]

2 Marks Questions

Q5. Solve: $dy/dx + y = e^{-x}$.

[2020]

Q6. Solve: $(x \log x) dy/dx + y = 2 \log x$.

[2019]

Q7. Solve: $(1+x^2) dy/dx + 2xy = \cos x$.

[2023]

3 Marks Questions

Q8. Solve: $dy/dx + 2y \tan x = \sin x$, given $y=0$ when $x=\pi/3$.

[2022]

Q9. Solve: $(x^3 + y^3) dx - xy^2 dy = 0$.

[2020]

Q10. Solve: $dy/dx = (x+y+1)/(x+y-1)$.

[2019]

5 Marks Questions

Q11. Solve the differential equation: $(x^2 - y^2) dx + 2xy dy = 0$, given $y=1$ when $x=1$.

[2024]

Q12. Solve: $dy/dx = y/x + \sin(y/x)$.

[2017]

Q13. Solve: $(1+y^2) dx = (\tan^{-1} y - x) dy$.

[2016]

Chapter 10: Vector Algebra

1 Mark Questions

Q1. Find the magnitude of vector $2\mathbf{i} + 3\mathbf{j} - 6\mathbf{k}$.

[2020]

Q2. Find the unit vector in direction of $\mathbf{i} + 2\mathbf{j} + 2\mathbf{k}$.

[2019]

Q3. If $|\mathbf{a}|=2$, $|\mathbf{b}|=3$ and $\mathbf{a} \cdot \mathbf{b}=0$, find $|\mathbf{a} \times \mathbf{b}|$.

[2018]

Q4. Find the dot product of $\mathbf{i} + \mathbf{j} + \mathbf{k}$ and $2\mathbf{i} - \mathbf{j} + 3\mathbf{k}$.

[2022]

2 Marks Questions

Q5. If $\mathbf{a} = 2\mathbf{i} + 3\mathbf{j} - \mathbf{k}$ and $\mathbf{b} = \mathbf{i} + 2\mathbf{j} - 3\mathbf{k}$, find the projection of $\mathbf{a}$ on $\mathbf{b}$.

[2020]

Q6. Find a vector in direction of $\mathbf{i} - 2\mathbf{j} + 2\mathbf{k}$ with magnitude 9.

[2019]

Q7. If $\mathbf{a} = 2\mathbf{i} - \mathbf{j} + \mathbf{k}$ and $\mathbf{b} = \mathbf{i} + 2\mathbf{j} - 3\mathbf{k}$, find $\mathbf{a} \times \mathbf{b}$.

[2023]

3 Marks Questions

Q8. Show that the vectors $2\mathbf{i} - \mathbf{j} + \mathbf{k}$, $\mathbf{i} - 3\mathbf{j} - 5\mathbf{k}$ and $3\mathbf{i} - 4\mathbf{j} - 4\mathbf{k}$ form a right-angled triangle.

[2022]

Q9. If $\mathbf{a}$ and $\mathbf{b}$ are such that $|\mathbf{a}+\mathbf{b}| = |\mathbf{a}-\mathbf{b}|$, prove that $\mathbf{a}$ and $\mathbf{b}$ are perpendicular.

[2020]

Q10. Find the area of triangle with vertices $(1,1,2)$, $(2,3,5)$ and $(1,5,5)$.

[2019]

5 Marks Questions

Q11. Prove that the parallelogram law of vector addition: $|\mathbf{a}+\mathbf{b}|^2 + |\mathbf{a}-\mathbf{b}|^2 = 2(|\mathbf{a}|^2 + |\mathbf{b}|^2)$.

[2024]

Q12. Find the sine of the angle between vectors $\mathbf{a} = 2\mathbf{i} - \mathbf{j} + 3\mathbf{k}$ and $\mathbf{b} = 3\mathbf{i} + 2\mathbf{j} - \mathbf{k}$.

[2017]

Chapter 11: Three Dimensional Geometry

1 Mark Questions

Q1. Find direction ratios of line joining $(2,3,-1)$ and $(4,5,2)$.

[2020]

Q2. Write the equation of line passing through $(1,2,3)$ with direction ratios $2,3,4$.

[2019]

Q3. Find the angle between lines whose direction ratios are $1,2,3$ and $3,2,1$.

[2018]

Q4. Find the distance of point $(1,2,3)$ from the plane $x + y + z = 6$.

[2022]

2 Marks Questions

Q5. Find the equation of plane passing through $(1,2,3)$ and parallel to the plane $x + y + z = 5$.

[2020]

Q6. Find the angle between the plane $x + y + z = 1$ and line $(x-1)/2 = (y-3)/1 = (z-4)/-1$.

[2019]

Q7. Find the shortest distance between lines $(x-1)/2 = (y-2)/3 = (z-3)/4$ and $(x-2)/3 = (y-4)/4 = (z-5)/5$.

[2023]

3 Marks Questions

Q8. Find the shortest distance between lines $r = (i+j-k) + t(3i-j+2k)$ and $r = (2i-j-k) + s(i+2j-4k)$.

[2022]

Q9. Find the equation of plane passing through the line of intersection of planes $x+y+z=1$ and $2x+3y+4z=5$ and perpendicular to plane $x-y+z=0$.

[2020]

Q10. Find the foot of perpendicular from $(2,3,4)$ to the line $(x-1)/2 = (y-2)/3 = (z-3)/4$.

[2019]

5 Marks Questions

Q11. Find the acute angle between the lines $(x-1)/2 = (y-2)/3 = (z-3)/4$ and $(x-2)/3 = (y-4)/4 = (z-5)/5$.

[2024]

Q12. Find the distance of point $(3,4,5)$ from the plane $2x + y - z = 5$ measured parallel to line $x/2 = y/3 = z/-1$.

[2017]

Chapter 12: Linear Programming

2 Marks Questions

Q1. Define feasible region in LPP.

[2020]

Q2. Draw the feasible region for constraints: $x + y \leq 4$, $x \geq 0$, $y \geq 0$.

[2019]

Q3. What is an optimal solution in LPP?

[2023]

3 Marks Questions

Q4. Solve graphically: Minimize $Z = x + 2y$ subject to $2x + y \geq 3$, $x + 2y \geq 6$, $x \geq 0$, $y \geq 0$.

[2022]

Q5. Maximize $Z = 3x + 2y$ subject to $x + 2y \leq 10$, $3x + y \leq 15$, $x \geq 0$, $y \geq 0$.

[2020]

Q6. Minimize $Z = 3x + 5y$ subject to $x + 3y \geq 3$, $x + y \geq 2$, $x \geq 0$, $y \geq 0$.

[2019]

5 Marks Questions

Q7. A manufacturer produces nuts and bolts. Each unit of nuts needs 1 hr on machine A and 3 hr on machine B. Each unit of bolts needs 3 hr on machine A and 1 hr on machine B. Machines A and B can work at most 12 hr and 12 hr/day. Profit per unit on nuts is Rs 5 and on bolts is Rs 7. Find optimal production to maximize profit.

[2024]

Q8. Solve the LPP graphically: Minimize $Z = 5x + 10y$ subject to $x + 2y \leq 120$, $x + y \geq 60$, $x - 2y \geq 0$, $x \geq 0$, $y \geq 0$.

[2017]

Q9. A diet is to contain at least 80 units of vitamin A and 100 units of minerals. Two foods X and Y cost Rs 5 and Rs 4 per unit. One unit of X contains 4 units of vitamin A and 2 units of minerals. One unit of Y contains 2 units of vitamin A and 5 units of minerals. Find the minimum cost.

[2016]

Chapter 13: Probability

1 Mark Questions

Q1. If $P(A)=0.4$, $P(B)=0.5$ and $P(A \cap B)=0.2$, find $P(A|B)$.

[2020]

Q2. Define conditional probability.

[2019]

Q3. If $P(A)=0.5$, $P(B)=0.4$ and $P(A \cup B)=0.7$, find $P(A|B)$.

[2018]

Q4. Two events A and B are such that $P(A)=0.3$, $P(B)=0.4$ and $P(A|B)=0.5$. Find $P(A \cap B)$.

[2022]

2 Marks Questions

Q5. A bag contains 3 red and 5 black balls. Two balls are drawn without replacement. Find the probability that both are red.

[2020]

Q6. A die is thrown twice. Find the probability that sum of numbers is at least 10.

[2019]

Q7. If A and B are independent events, prove that A' and B' are also independent.

[2023]

3 Marks Questions

Q8. A coin is biased such that head is twice as likely as tail. Find probability distribution of number of heads in 3 tosses.

[2022]

Q9. In a class, 30% students fail in Maths and 40% fail in English. 20% fail in both. Find probability that a student who failed in Maths also failed in English.

[2020]

Q10. Bag A has 3 red and 2 black balls. Bag B has 4 red and 3 black balls. A bag is selected at random and a ball is drawn. Find probability that it is red.

[2019]

5 Marks Questions

Q11. Three machines X, Y, Z produce respectively 60%, 30% and 10% of total items. 2%, 3% and 4% of items from them are defective. An item is drawn at random and found defective. Find the probability that it came from machine X.

[2024]

Q12. Find the probability distribution of number of aces in 3 draws without replacement from a well-shuffled pack of 52 cards.

[2017]

Q13. Two numbers are selected at random from 1,2,3,...,6 without replacement. Find the probability distribution of sum of the numbers. Also find mean.

[2016]