



The No. 1 CBSE Math Website In The World

In The Service of Student Community

**Time hour**

**Sample Paper: Class XII**

**MM 32**

**Three Dimensional Geometry, Vectors, Linear Programming, Probability**

1. Find the value of  $p$  for which the vectors  $\vec{a} = 2\hat{i} + 3\hat{j} - \hat{k}$  and  $\vec{b} = 4\hat{i} + 6\hat{j} + p\hat{k}$  are parallel. 1
2. Find a unit vector in the direction of vector  $\vec{p} + \vec{q}$ , where  $\vec{p} = 2\hat{i} + 3\hat{j} - \hat{k}$  and  $\vec{q} = 4\hat{i} + 6\hat{j} + 5\hat{k}$  1
3. Find the vector equation of a line passing through a point with position vector  $2\hat{i} - \hat{j} + \hat{k}$  parallel to the line joining the points  $-\hat{i} + 4\hat{j} + \hat{k}$  and  $\hat{i} + 2\hat{j} + 2\hat{k}$ . 1
4. A police-man fires four bullets on a dacoit. The probability that the dacoit will be killed by one bullet is 0.6. What is the probability that the dacoit is still alive? 1
5. With the help of vectors, find the area of a triangle with vertices  $(1, 2, 4)$ ,  $(3, -1, 2)$  and  $(4, 3, 1)$ . 4
6. Find the equation of a plane through the point  $(-1, -1, 2)$  and perpendicular to the planes  $3x + 2y - 3z = 1$  and  $5x - 4y + z = 5$

4

**Also Visit**

[cbsemathspapers.com](http://cbsemathspapers.com)

**CBSE Maths Sample Papers, Mock Tests, Interactive online Tests, Syllabus etc.**

**And**

[cbseresults2012.com](http://cbseresults2012.com)

**Previous Years CBSE Results - X, XII & AIEEE**

**And**

[thecareerhunt.biz](http://thecareerhunt.biz)

**Placements, Web Advertisements**

cbsemath.com: website by Dev Anoop



The No. 1 CBSE Math Website In The World

In The Service of Student Community

**Time hour**

**Sample Paper: Class XII**

**MM 32**

**Three Dimensional Geometry, Vectors, Linear Programming, Probability**

7. In triangle ABC, prove by vectors that  $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$  4
8. A and B throw alternately a pair of dice. A wins if he throws 6 before B throws 7 and B wins if he throws 7 before A throws 6. Find their respective chance of winning, if A begins. 4
9. Find the shortest distance between the lines  $\frac{x-1}{2} = \frac{y-2}{3} = \frac{z-3}{4}$  and  $\frac{x-2}{3} = \frac{y-4}{4} = \frac{z-5}{5}$ . 6
10. A producer has 30 and 17 units of labour and capital respectively which he can use to produce two types of goods X and Y. To produce one unit of X, 3 units of capital and 2 units of labour are required and to produce one unit of Y, 3 units of labour and 1 unit of capital is required. If X and Y are priced at `100 and `120 respectively, how should the producer use his resources to maximize the total revenue? Form the LPP and solve it. 6

**Paper by Pawan Kumar, St. Joseph's Convent School, Bathinda**

**Also Visit**

[cbse.biz](http://cbse.biz)

**CBSE Mathematics Sample Papers, Mock Tests, Interactive Tests, Syllabus etc.**

**And**

[cbseresults2010.com](http://cbseresults2010.com)

**Previous Years CBSE Results - X, XII & AIEEE**

**And**

[thecareerhunt.biz](http://thecareerhunt.biz)

**Placements, Web Advertisements**

cbsemath.com: website by Dev Anoop