

y = ax2+bx+c DLS 0.25 0.5 => 3(9a-4p)2 = (0-(0-0+0))2+ (0.75-(a03a+0.5b+c)) + (1-(a+b+1))+ + (\$2.55-(\$.50+1.5b+c) ga-(ax+bx+c) 72

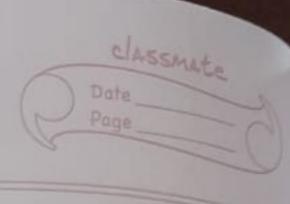
= 6 042

Q6: Let X be a continuous random variable with PDF given as

$$f_{\mathbf{x}}(\mathbf{x}) = \frac{1}{\sqrt{2\pi}} \exp^{-\frac{x^2}{2}},$$

for all $x \in \mathcal{R}$

And let $Y = X^2$. Find $f_Y(y)$.



0=1

P(AIB) = P(B/AI) XP(AI)

P(B)

= (1-21) x 1/3

 $(1-x^{9}) + 2$ $\frac{3}{3}$

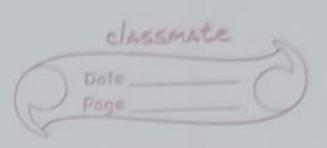
P(A1B) 2 1-21 3-21

P=2 P(B/A2) * P(A2)

PB

 $\frac{2}{2} \frac{1 \times 113}{(1-\alpha)} + \frac{2}{3}$

P(A2/B) = - = P(A3/B) 3-21 Penvious Mid Exam



P(B) = probability that a search of region is unsuccessful

P(Ai) => as prior probability that the plane is in that region

Now we need P(AiB)

P(A9|B) = P(B|A9) +P(A9)

P(B)

P=1=) P(B) = P(AP) P(B/AP) - P(A2) P(B/A)

P(A3) x p (B/A3)

p(B)/2 4(P(A) 21/3 All region equal mobels for plane is there P(B)2 1 (1-29)+ 1 (1) + 1 (1)

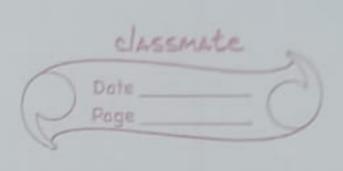
P(B/Az) B / because of your Scench plane in first region but plane is in @ Hence P(B/AL) =1

P(A1 B) = P(B/A1) XP(A1) = (1-X1) x 1/3 $(1-x^{2}) + 2$ $\frac{3}{3}$ P(A) B) Z 1-21 3-21 P=2 P(B/A2) * P(A2) 2 - 1 = PA3 B

5377517.

My2-My, > 3 \$00 A 13/4 12/08 Mdiff = My My = 0 taif = out toy = 2 0 (3.1)2 (fif z \2 x 3 1 = 4.88 2= 82-41 = 3 P(270.6849)21-0.7517 P20.2483 521-2-0-1- (81P1.055) 9

611811.13 - 1



y=[#7] V=[4]

Orthogonal projection of y Puto u

[200] A = (A.A) B.

y-w= [7] = 7x4+6+2

0-0=[4][4]=20

besof A = (10) 0 = 80. = [8]

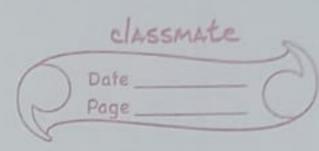
write y as sum of orthogonal Vectors

One in Spanzuz and one is Orthogonal tou

J= 8pan 2 2 3 + proj, 4.

g= 1000, y = [3] - [8] = [2]

y= [8]+[-1] y= gpan g v [8] + vector is otherenal to of [] (8) = -8+8 ZO Cathor orthogenal to U.

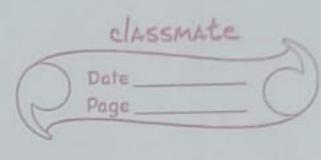


Subspace proparating (His Subspace of V) -> The 2000 vector of V is in H -> Closed under addition (votor) -> Closed under Scalar multipliation @ Loro Vector 0.01+0.02=0 a1 = C1 1/1 + C2 1/2 a 2 = d1 81 + d2 02

 $a_1 + a_2 = c_1 + c_2 = c_2 + d_1 = c_1 + d_2 = c_1 + d_1 = c_2 + d_1 = c_2 + d_2 = c_2 + d_1 = c_2 + d_2 = c_1 + c_2 = c_2 = c_2 = c_1 + c_2 = c_2 = c_2 = c_2 = c_2 = c_2 = c_1 + c_2 = c_2$

K-a-K((10, + (202)

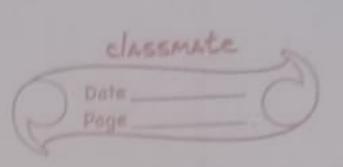
2 k Cy O, + k C2 02



Eq = 75 Ext = 13.75 73 - 28.125 ay - 61.187 6G+7-5b+13-75a=13-75-0 7.5C+ 13.75b+ 28.195 a- 28.125-2 13.75C+ 28.125b+ 61.1875 -78.0625-co Q=-1375/112=-11.83 b 2 3875/112 = 35.49 20 Calculation communda

classmate de = 2 (4 fy(y)= fa(ry) (dy)

Penvious Mid Exam



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P(A3) x p (B/A3)

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