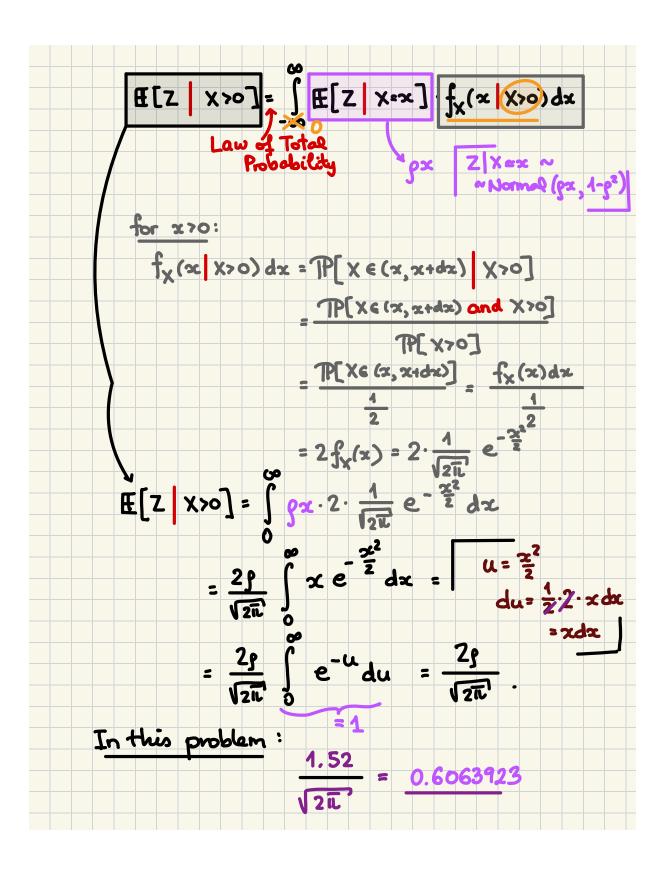
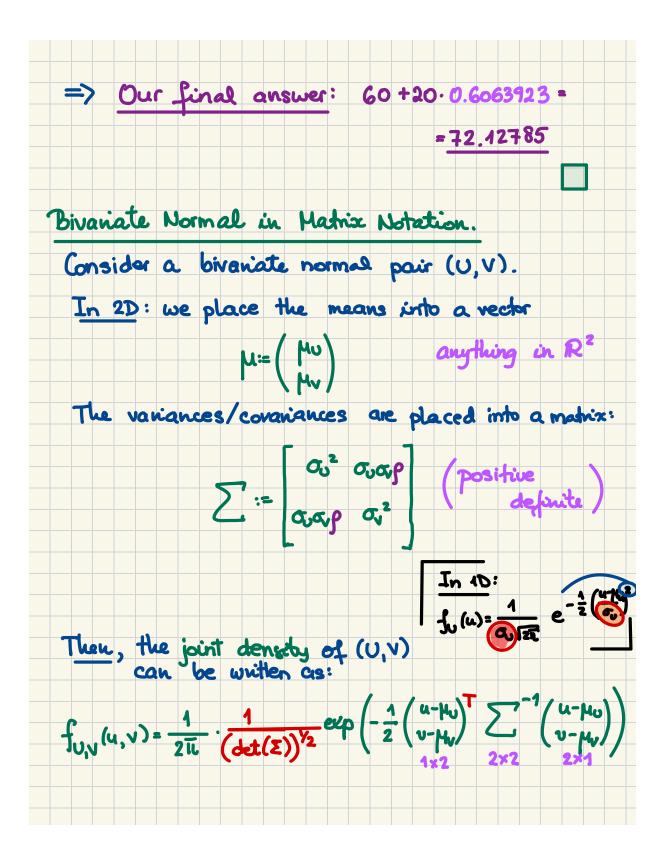
Problem. Midtern and final.	
Midtern and final scor	es in a large class
have an (approximately) dist'n ω/ parameters:) bivavat normal
mean sd.	
	correlation: 0.76
final 60 20	
Q: What is the "estimated" m the students who were abor	ean final score of re the mean
on the midtern?	
and let V be the final sc	Score,
Our task is to find:	
E[V U>m]=?	
	V in standard with
Let X and Z be U and	Mesp.
Our ancillary task is to fin	
E[Z X >0] =?	
$\mathbb{E}[Z \mid X > 0] = \frac{\mathbb{E}[Z \cdot \mathbb{I}_{[X > 0]}]}{\mathbb{E}[Z \cdot \mathbb{I}_{[X > 0]}]}$	<u>63 7</u>
#[Z X70] = P[X70]	





Multivariate Normal Density. Let $X = (X_1, X_2, ..., X_p)^T$ be

Normal (mean =
$$\mu$$
: $(\mu_1, \mu_2, ..., \mu_p)^T$, $\Sigma = \begin{bmatrix} \sigma_1^2 & \omega & \omega & \omega \\ \omega & \ddots & \ddots & \omega \\ \omega & \ddots & \ddots & \sigma_n^2 \end{bmatrix}$
 ω / Σ positive definite.

Then,

$$f_{\mathcal{K}}(x_{1},...,x_{p}) = \frac{1}{(2\pi)^{p/2}} \cdot \frac{1}{(\det(\Sigma))^{V_{2}}} \exp\left(-\frac{1}{2}(x-\mu)^{T} \sum_{i=1}^{r-1}(x-\mu)\right)$$
for all $x \in \mathbb{R}^{p}$