

5.
$$E(x) = \frac{(x-7)(x+7)}{x(x-7)} - \frac{2x+7}{x(x+1)} (x+1) =$$

$$= \frac{x+7}{x} - \frac{2x+7}{x} = -\frac{x}{x} = -1$$

III 1. a) Aria terenului este $150 \cdot 100$, adica 15000 m^2
 deci $1,5 \text{ ha}$

1. b) $[ABCD]$ dreptunghi $\Rightarrow DC=AB=150 \quad \Rightarrow DN=100 \Rightarrow NC=50$
 $DN=2NC$
 M mijloc $(AD) \Rightarrow DM=50$
 $m(\hat{D}) = m(\hat{C}) = 90^\circ \Rightarrow \Delta NDM, \Delta BCN$ dreptunghiuri $\quad \text{C.C.}$
 $DN \equiv CB (100 \text{ m})$
 $NC \equiv DM (50 \text{ m})$

$\Delta NDM \equiv \Delta BCN \Rightarrow NM \equiv BN \Rightarrow \Delta MNB$ isoscel

1. c) $\Delta NDM \equiv \Delta BCN \Rightarrow \hat{DNM} \equiv \hat{CBN}$
 \hat{BNC}, \hat{CBN} - complementare $\quad \neq$

$\Rightarrow \hat{DNM}, \hat{BNC}$ - complementare $\quad \neq$
 $\hat{DNM}, \hat{MNB}, \hat{BNC}$ - suplementare $\quad \neq$
 $\Rightarrow m(\hat{MNB}) = 90^\circ$

III 2 a) $[VABCO]$ piramidă patrulateră regulată \Rightarrow

$\Rightarrow VA \equiv VD \Rightarrow \Delta VAD$ isoscel $\quad \neq, VO \perp AD; AM=3$
 M mijloc (AD)
 $\Rightarrow \Delta VMA$ dreptunghi în M $\quad \text{T. Pitagora} \Rightarrow VA^2 = VM^2 + AM^2$

$\Rightarrow (3\sqrt{5})^2 = 3^2 + VM^2 \Rightarrow VM^2 = 36 \Rightarrow VM = 6$

2 b) Aria laterali a piramidei este $4 \cdot A_{\Delta VAD} =$

$= 4 \cdot \frac{VM \cdot AD}{2} = 2 \cdot 6 \cdot 6 = 72 \text{ (dm}^2\text{)}$

Cantitatea de vopsea: $72 \cdot 30$; deci 2160 grame

2 c) $(VAD) \cap (VBC) = d, \quad V \in d$
 $AD \subset (VAD)$
 $BC \subset (VBC)$
 $AD \parallel BC$
 $\Rightarrow AD \parallel BC \parallel d$
 $\Rightarrow VM \perp d$
 $\Rightarrow VN \perp d$
 Fie N mijloc $(BC) \Rightarrow VN \perp BC$
 $VM \perp AD$

$\Rightarrow \angle(VM, VN)$ - unghi plan al diedrului \wedge
 ΔVMN echilateral ($VM=VN=MN=6$) $\Rightarrow m(\hat{MVN}) = 60^\circ$