CLASA A VIII-A
BAREM DE CORECTARE

SUBIECTUL 1.

1. a) Aducerea la același numitor ……2p
Desfiinţarea parantezelor ……2p
Finalizare ……1p
b) utilizare rezultat a) ……1p
$36b^4+\left(a^2-b^2\right)^2\geq 2\left(a^2-b^2\right)\cdot 6b^2$ ……2p
$\left(6b^2-a^2+b^2\right)^2\geq 0$ ……2p

2. a) $x\cdot y-x-y+1$ ……2p
$x+y-x-y+1=1$ ……3p
b) din a) $\Rightarrow y=\dfrac{1}{x-1}+1$ ……2p
$\{y\}=\dfrac{1}{x-1}$ ……2p
$x>2015\Rightarrow\{y\}<\dfrac{1}{2014}$ ……1p

SUBIECTUL 2.

1) a) $x^2-2x\neq 0\Rightarrow x\neq 0, x\neq 2$ ……1p
$(x+3)(x+2)(x-2)\neq 0\Rightarrow x\neq -3, x\neq -2, x\neq 2$ ……1p
$x^2+2x\neq 0\Rightarrow x\neq 0, x\neq -2$ ……1p
$x\neq 0$ ……1p
Finalizare $x\in\mathbb{R}\setminus\{-3;-2;0;2\}$ …… 1p
b) $E(x)=\left(\dfrac{2}{x-2}-\dfrac{4}{(x+2)(x-2)}+\dfrac{x}{x+2}\right)\cdot\dfrac{x^2-4}{x}$ ……1p
Aducere la același numitor ……1p
Calcul paranteză ……1p
Simplificări ……1p
Finalizare $E(x)=x$ ……1p
c) $E(1)+E(3)+\ldots+E(2015)=1+3+\ldots+2015$ ……1p
Calculul sumă $S=1008^2$ ……4p

2) $\sqrt{7-4\sqrt{3}}=\sqrt{\left(2-\sqrt{3}\right)^2}=\left|2-\sqrt{3}\right|=2-\sqrt{3}$ ……2p

$\sqrt{6-3\sqrt{3}}=\sqrt{\frac{3}{2}\left(4-2\sqrt{3}\right)}=\frac{\sqrt{3}\left(\sqrt{3}-1\right)}{\sqrt{2}}=\frac{3-\sqrt{3}}{\sqrt{2}}$ ……2p

$\sqrt{7-2\sqrt{3}-2\sqrt{2}\cdot\frac{3-\sqrt{3}}{\sqrt{2}}}=\sqrt{7-2\sqrt{3}-6+2\sqrt{3}}=1\in\mathbb{N}$ ……1p

SUBIECTUL 3.

1) **a)** $(PBC)\perp(PBD)\Leftrightarrow DB\perp(PBC)$ ……2p

$\left.\begin{matrix}DB\perp(PBC)\\BC\subset(PBC)\end{matrix}\right\}\Leftrightarrow DB\perp BC$ ……1p

$\left.\begin{matrix}m(\sphericalangle A)=60^\circ\Leftrightarrow m(\sphericalangle C)=60^\circ\\DB\perp BC\end{matrix}\right\}\Leftrightarrow m(\sphericalangle BDC)=30^\circ$ ……1p

$\Leftrightarrow BC=\frac{DC}{2}\Leftrightarrow AB=2BC$ ……1p

b) $\left.\begin{matrix}AB=2a\\BC=a\end{matrix}\right\}\Leftrightarrow AB=2BC\Leftrightarrow\begin{cases}\triangle ADB\ dr\\\triangle PBD\ \text{dr}\end{cases}$ ……2p

$V_{PABD}=\frac{PC\cdot A_{\triangle ABD}}{3}=\frac{a^3}{2}$ ……1p

$V_{PABD}=V_{APBD}=\frac{h\cdot A_{\triangle PBD}}{3}=\frac{h\cdot a^2\sqrt{3}}{3}$ ……1p

$h=d\left(A,(PBD)\right)=\frac{a\sqrt{3}}{2}$ ……1p

2) **a)** Demonstrează $DA'BC'$ tetraedru regulat ……1p

Calcul volum cub: $V=a^3$ ……1p

Calcul volum tetraedru: $V=\frac{a^3}{3}$ ……2p

Finalizare ……1p

b) $a=12cm$ ……3p

$A_t=867cm^2$ ……2p