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**Concursul Județean de Matematică ”Simion Sorin”**

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**clasa a VIII-a**

**Barem de corectare și notare**

**Subiectul 1**

1. $\left[5x+\frac{2}{3}\right]=x-\left[x\right]<=>\left[5x+\frac{2}{3}\right]=\left\{x\right\}$

$0\leq \left\{x\right\}<1$ $=>\left\{x\right\}=0$ .................................... 2p

$=>x\in Z=>\left[5x+\frac{2}{3}\right]=0$ ....................................................................................... 1p

$<=>0\leq 5x+\frac{2}{3}<1=>x\in \left[-\frac{2}{15},\left.\frac{1}{15}\right)\right.$ ................................................................ 1p

1. $\left\{\frac{5x+2}{x+3}\right\}=x-\left\{x\right\}<=>\left\{\frac{5x+2}{x+3}\right\}=\left[x\right]$

$\left[x\right]\in Z$ $=>\left\{\frac{5x+2}{x+3}\right\}=0$ ....................................... 1p

$\frac{5x+2}{x+3}=k, k\in Z$ ........................................................................................................... 1p

Finalizare ................................................................................................................................. 1p

**Subiectul 2**

1. $z=-x-y$ ............................................................................................................... 1p

Finalizare .......................................................................................................................... 2p

$(2x-5)^{3}+(3x+2)^{3}+(-5x+3)^{3}=0$ ............................................................. 1p

$\left(2x-5\right)+\left(3x+2\right)+\left(-5x+3\right)=0$ .................................................................... 1p

Din a) $=>3\left(2x-5\right)\left(3x+2\right)\left(-5x+3\right)=0$ ........................................................ 1p

Finalizare ..................................................................................................................... 1p

**Subiectul 3**

1. După îndoire noua poziție a punctului C este $C^{'}$.

$\left(\hat{AD;BC^{'}}\right)=\hat{C^{'}BC}$ ..................................................................................................... 1p

$C^{'}D⊥\left(ABD\right)$ .............................................................................................................. 1p

$∆BC^{'}C=∆ echilateral$ ............................................................................................. 1p

$m\left(\hat{AD;BC^{'}}\right)=60°$...................................................................................................... 1p

1. $V=\frac{1}{6}∙AD∙BC^{'}∙d\left(AD;BC^{'}\right)∙sin\left(AD;BC^{'}\right)$ .......................................................... 1p

 $V\_{ABDC^{'}}=\frac{a^{3}}{6}$ ................................................................................................................. 1p

 Finalizare ..................................................................................................................... 1p