1) $(10p)$	2) $(10p)$	3) $(10p)$	4 $(10p)$	5) $(10p)$	6) $(10p)$
b)	d)	b)	d)	a)	d)

Subiectul 7 (15p)
Rezolvare

a) $A = \log_2 64 + \log_3 729 = 6+6 = 12$ (2p)

$B = (0,5)^3 \cdot \frac{1}{16} \cdot \left(4^{\sqrt{12}}\right)^{\sqrt{3}} = (0,5)^3 \cdot \frac{1}{16} \cdot 4^6 = \left(\frac{1}{2}\right)^3 \frac{1}{16} \cdot 4^6 = \frac{2^{12}}{2^7} = 2^5 = 32$ (3p)

$\sqrt{2A \cdot 3B} = \sqrt{24 \cdot 96} = 24 \cdot 2 = 48$ (3p)

b) Calculați $S = [\log_2 1] + [\log_2 2] + [\log_2 3] + [\log_2 4]\dots\dots\dots\dots[\log_2 62] + [\log_2 63]$

$\log_2 1 = 0; \log_2 2 = 1$ (1p)

$$1 = \log_2 2 < \log_2 3 < \log_2 4 = 2 \quad (1p)$$

$2 = \log_2 4 < \log_2 5 < \log_2 6 < \log_2 7 < \log_2 8 = 3$ (1p)

$3 = \log_2 8 < \log_2 9 < \log_2 10 < \dots < \log_2 15 < \log_2 16 = 4$ (1p)

$4 = \log_2 16 < \log_2 17 \, \log_2 18 < \dots \dots \quad < \log_2 32 = 5$ (1p)

$5 = \log_2 32 < \log_2 33 < \log_2 34 < \log_2 35 < \dots \dots \log_2 63$ (1p)

$S = 0+1+1+2+2+2+2+3 \cdot 8 + 4 \cdot 16 + 5 \cdot 32 = 258$ (1p)

Subiectul 8 (15p)

$z \in IR \Leftrightarrow z = \overline{z}$ $(2p)$

$\Rightarrow \overline{z_1 + 3z_2 - 4z_3} = 0$ (2p)

$\Leftrightarrow \overline{z_1} + \overline{z_2} + \overline{z_3} = 0$ (2p)

Dar $z \cdot \overline{z} = |z|^2 = r^2$ $(2p)$

$\Rightarrow \overline{z} = \frac{r^2}{z}$. (1p)

Astfel obținem:

$\overline{z_1} + \overline{3z_2} - \overline{4z_3} = 0 \Leftrightarrow \frac{r^2}{z_1} + 3\frac{r^2}{z_2} - 4\frac{r^2}{z_3} = 0$ (2p)

$\Leftrightarrow \frac{1}{z_1} + \frac{3}{z_2} - \frac{4}{z_3} = 0$ (2p)

$\Leftrightarrow z_2 z_3 + 3z_1 z_3 - 4z_1 z_2 = 0$ (2p)