

### Problema 6.1

<b>a)</b>	$V = l^3; \quad l = 1 \text{ m}; \quad l_1 = 1 \text{ mm};$ $1 \text{ m} = 1000 \text{ mm};$ $1 \text{ m}^3 = (1000 \text{ mm})^3 = 1\,000\,000\,000 \text{ mm}^3;$ La secționare obținem $n = 1\,000\,000\,000$ de cubulețe cu V de $1 \text{ mm}^3;$	<u>(0.5 p.)</u>  <u>(0.5 p.)</u> <u>(1.0 p.)</u>	<b>2.0 p.</b>
<b>b)</b>	$L = n \cdot l_1$ $L = 1\,000\,000\,000 \cdot 1 \text{ mm} = 1\,000\,000\,000 \text{ mm} = 1\,000\,000 \text{ m} = 1000 \text{ km};$	<u>(1.0 p.)</u> <u>(1.0 p.)</u>	<b>(2.0 p.)</b>
<b>c)</b>	$S = \frac{V}{H}; \quad 1 \text{ m}^2 = (1000 \text{ mm})^2 = 1\,000\,000 \text{ mm}^2;$ $S = \frac{1\,000\,000\,000 \text{ mm}^3}{1 \text{ mm}} = 1\,000\,000\,000 \text{ mm}^2 = 1000 \text{ m}^2;$	<u>(1.0 p.)</u>  <u>(1.0 p.)</u>	<b>(2.0 p.)</b>
<b>d)</b>	$t = n \cdot \tau;$ $1 \text{ h} = 3\,600 \text{ s};$ $1 \text{ zi} = 24 \text{ h} = 86\,400 \text{ s};$ $1 \text{ an} \approx 365,25 \text{ zile};$ $t = 1\,000\,000\,000 \cdot 1 \text{ s} = 1\,000\,000\,000 \text{ s};$ $t = \frac{1\,000\,000\,000}{86\,400} = 11\,574 \text{ zile} \approx 31,7 \text{ ani};$	<u>(0.5 p.)</u> <u>(0.25 p.)</u> <u>(0.25 p.)</u> <u>(0.25 p.)</u> <u>(0.25 p.)</u> <u>(0.5 p.)</u>	<b>(2.0 p.)</b>
<b>e)</b>	$N = V_t / l_1^3$ $L / l_1 = 40 \text{ cm} / 1 \text{ mm} = 400$ $l / l_1 = 20 \text{ cm} / 1 \text{ mm} = 200$ $h / l_1 = 15 \text{ cm} / 1 \text{ mm} = 150$ $N = (L \cdot l \cdot h) / l_1^3$ $N = (L \cdot l \cdot h) / l_1^3 = 400 \cdot 200 \cdot 150 = 12\,000\,000$ cubulețe	     <u>(1.0 p.)</u> <u>(1.0 p.)</u>	<b>(2.0 p.)</b>
<b>Total max</b>			<b>10.0 p.</b>