1. Care dintre culori reprezintă cul. gri.

2. [-3, 2, -1] coincide cu [-6, α, 2]

$\alpha = -4$ $\alpha = 4$ c/ α nu $\exists$ ✓

3. gluLookAt (2, 2, 2, 2, 2, 3, 0, 1, 0)

2, 2, 2 – poz. obs

2, 2, 3 – poz. pct. la care ne uităm.

0, 1, 0 – verticala la plan

4. gluOrtho2D(-10, 10, -20, 20) Aria dreptunghiului decupat!

L R B T

$l = 20$ $L = 40$ $A = 20 \cdot 40 = 800$

Ceața

$$f(z) = \begin{cases} \frac{end - z}{z - start} & \text{(liniară)} \\ e^{-\rho z} & \text{(exponențială - implicită)} \\ e^{-\rho z^2} & \text{(exp pătratică)} \end{cases}$$

↓
adâncime

5. Dați ex. de val. a.î. attenuation factor să fie 0.25 pct!

$d = 4$

$$\frac{1}{a_0 + a_1 \cdot d + a_2 d^2} = 0{,}25.$$

6. Mat. de transformări

$$\begin{pmatrix} 1 & 2 & 7 & 9 \\ 0 & 5 & 3 & 1 \\ 4 & 8 & 8 & 0 \\ 1 & 1 & 2 & 5 \end{pmatrix}$$

Cum sunt transf. pct.?
Dați ex. de pct. reale/inf?

7.
```
glBegin(GL_LINES)
glVertex2i(30,50);   P(30,50)
glVertex2i(70,140);  P(70,40)
glEnd();
```

8.
```
glColor3f(0,0,1)
glRect(-20,-20, 20,20)
```
A = 1600

9.
```
glColor3f(0,0,1)
glRect(-20,-20, 20,20)      l=40, L=40
glColor3f(0,1,0)
glScalef(0.5, 3.0, 0)       l=20, L=120
glRect(-20,-20, 20,20)
```
l/2 3·L

10. Pct. din spațiul modelare (a.k.a pct. modelare).

	pct. modelare	coord. texturale
α	A = (8,7)	a = (0.2, 0.4)
β	B = (6,11)	b = (0.6, 0.8)
γ	C = (13,13)	c = (0.2, 0.2)

Care sunt coord. de texturare ale lui P(10,11)? p = ?

↳ cât contribuie la P

$$\begin{cases} \alpha+\beta+\gamma=1 \\ 8\alpha+6\beta+13\gamma=10 \\ 7\alpha+11\beta+13\gamma=11 \end{cases} \Rightarrow \alpha = 1-\beta-\gamma$$

$$\begin{cases} 8-8\beta-8\gamma+6\beta+13\gamma=10 \\ 7-7\beta-7\gamma+11\beta+13\gamma=11 \end{cases}$$

$$\begin{cases} -2\beta+5\gamma=2 \mid \cdot 2 \\ 4\beta+6\gamma=4 \end{cases} \qquad \begin{cases} -4\beta+10\gamma=4 \\ 4\beta+6\gamma=4 \end{cases} \oplus$$

$$16\gamma=8$$

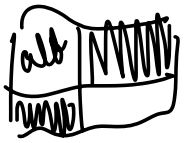
$$\gamma=\frac{1}{2} \quad \beta=\frac{1}{4} \quad \alpha=\frac{1}{4}$$

$$\frac{1}{4}\cdot 8+\frac{1}{4}\cdot 6+\frac{1}{2}\cdot 13 = \frac{14}{4}+\frac{13}{2} = \frac{20}{2}=10$$

$$\frac{1}{4}\cdot 7+\frac{1}{4}\cdot 11+\frac{1}{2}\cdot 13 = \frac{22}{2}=12.$$

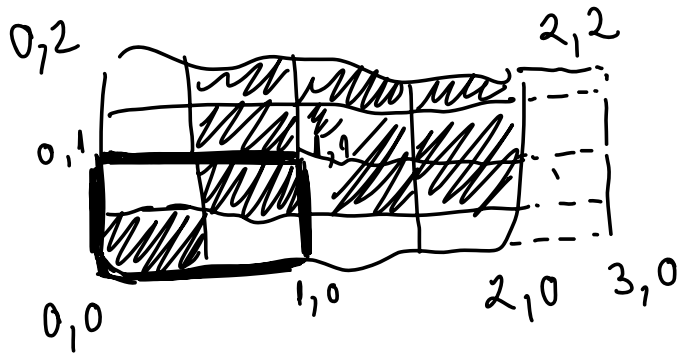
$$\left.\begin{array}{l} \frac{1}{4}\cdot 0{,}2+\frac{1}{4}\cdot 0{,}6+\frac{1}{2}\cdot 0{,}2=0.3 \\ \frac{1}{4}\cdot 0{,}4+\frac{1}{4}\cdot 0{,}6+\frac{1}{2}\cdot 0{,}2=0.4 \end{array}\right\} \Rightarrow p=(0{,}3,\ 0{,}4)$$

11. glFrustum
12. Pe fundal verde e desenat un patrat cu textura



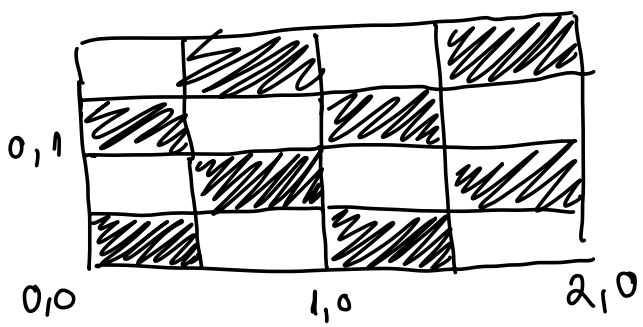
Coord. de text. sunt: $((0,0), (2,0), (2,2), (0,2))$

- GL_CLAMP $\frac{\text{alb}}{\text{negru}}$ = ?



$\frac{6}{10} = \frac{3}{5}$

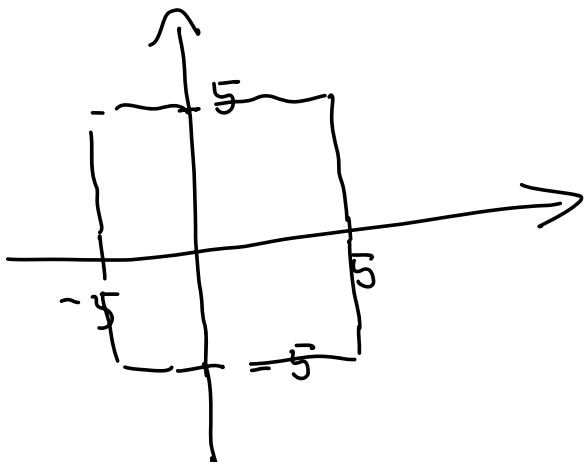
- GL_REPEAT



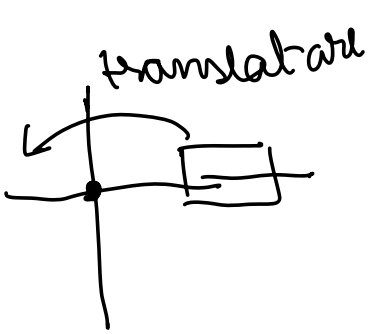
13. glScalef(s1, s2, 0)
glTranslatef(t_1, t_2, t_3)
glRect(a, b, c, d)

Al. valori $s_1 \neq 1$ a.î. $s_2 \neq 1$

pătrat centrat origine



$t_1, t_2, t_3 = 0$
$s_1, s_2 = 5$


translatari