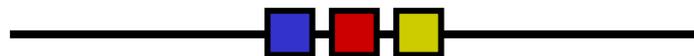


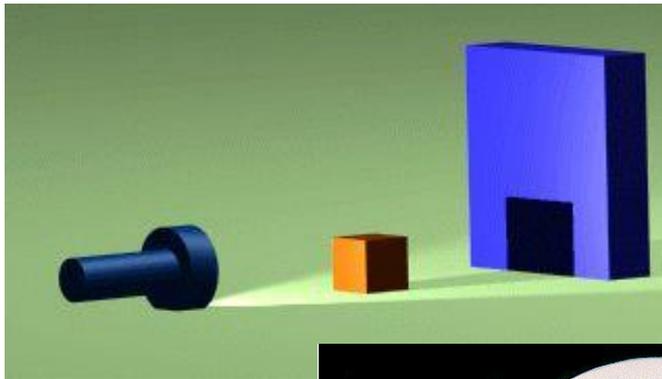
Geometria Descritiva I

Pontos e Retas

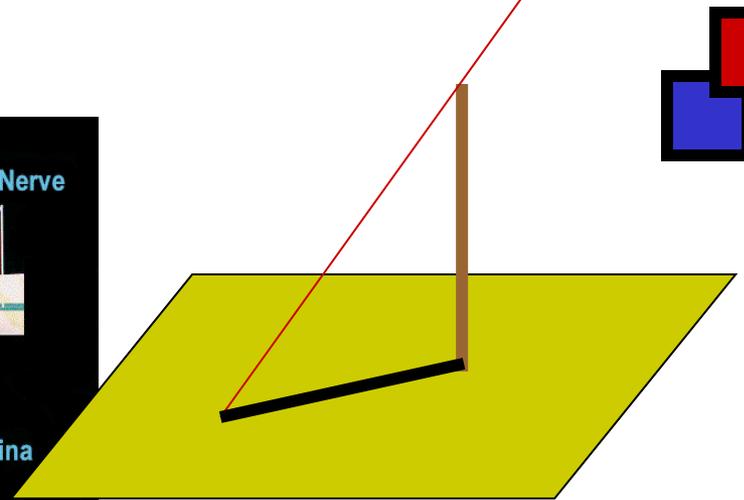
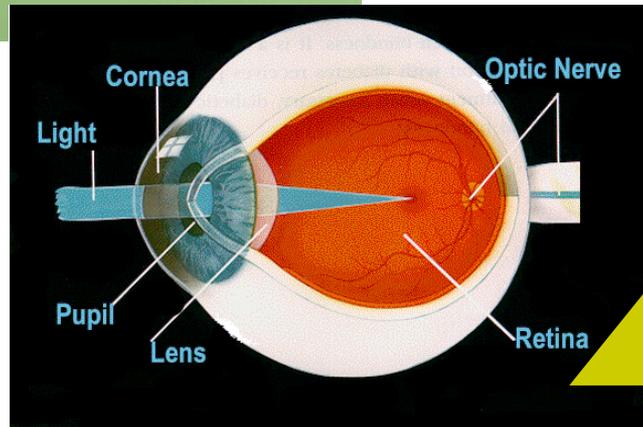


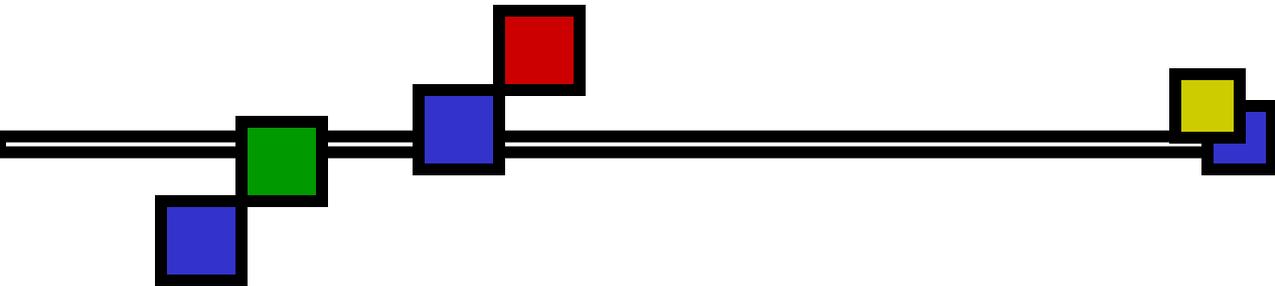
**PCC3100 Mecatrônica – Representação
Gráfica para Projeto**

Conceito de Projeção

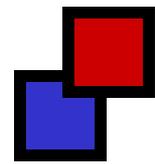
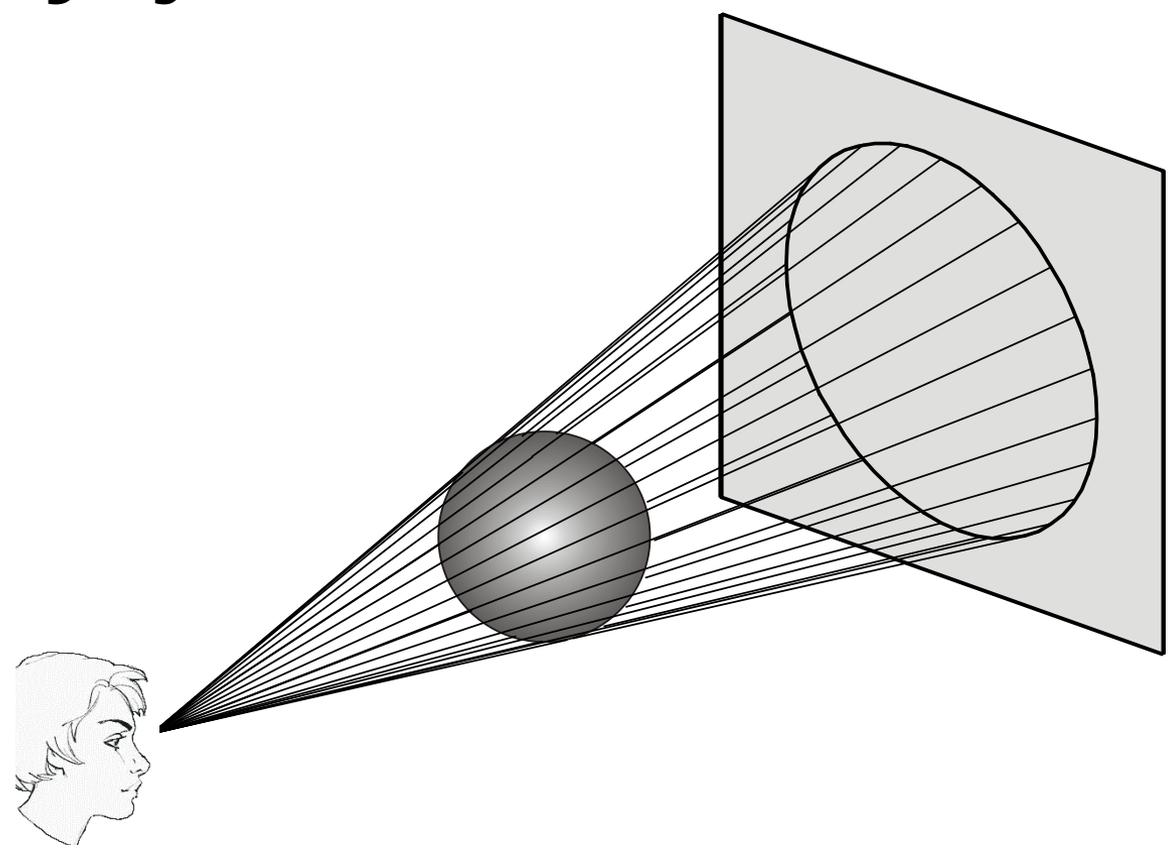
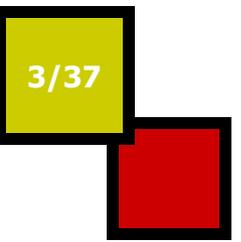


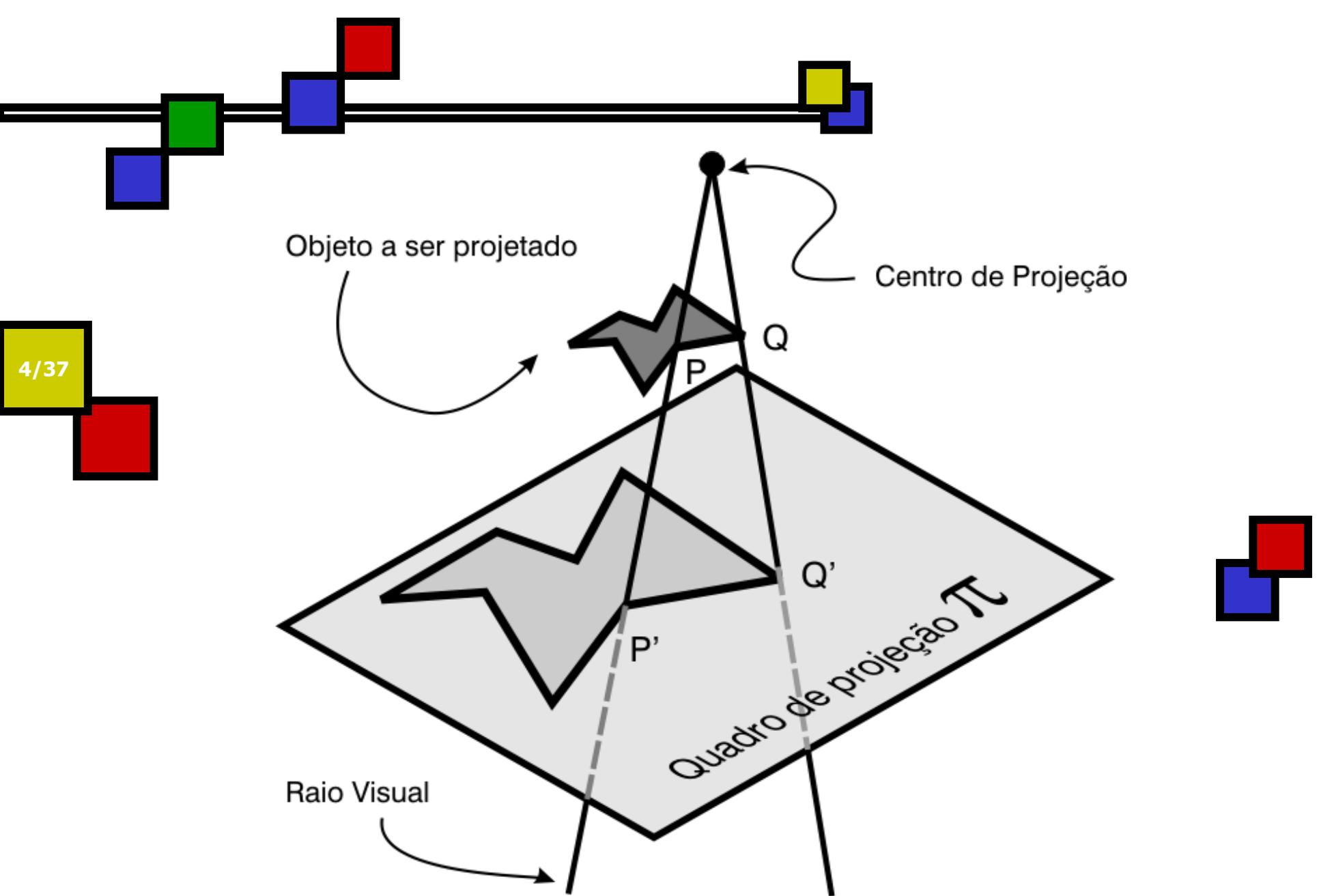
3D → **2D**



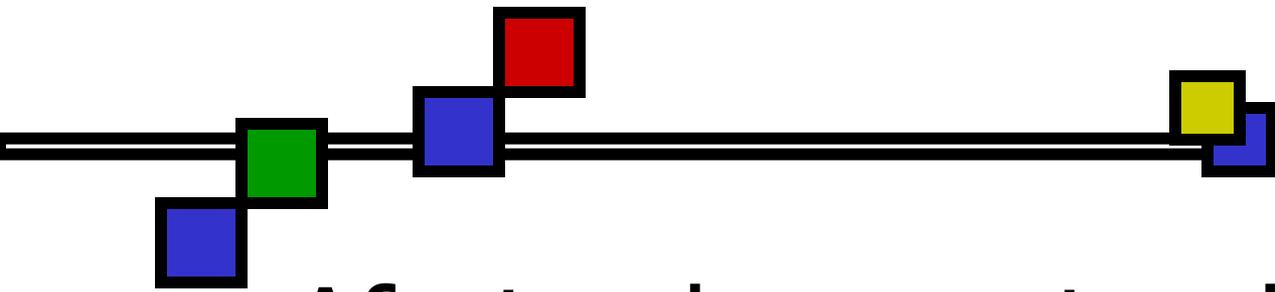


Projeção Cônica

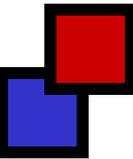
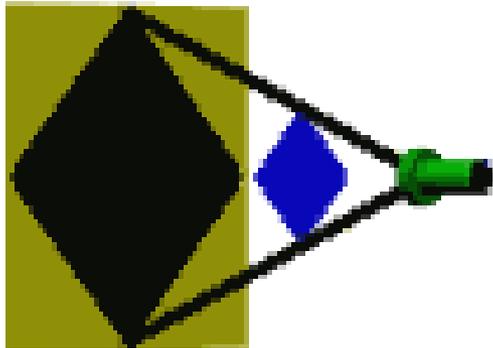
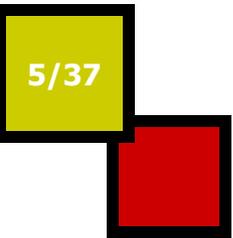


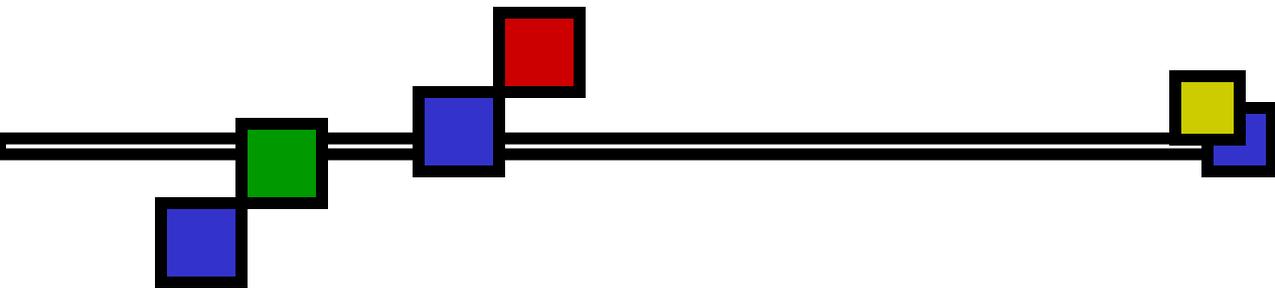


Elementos principais dos Sistemas de Projeção.

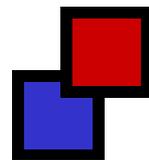
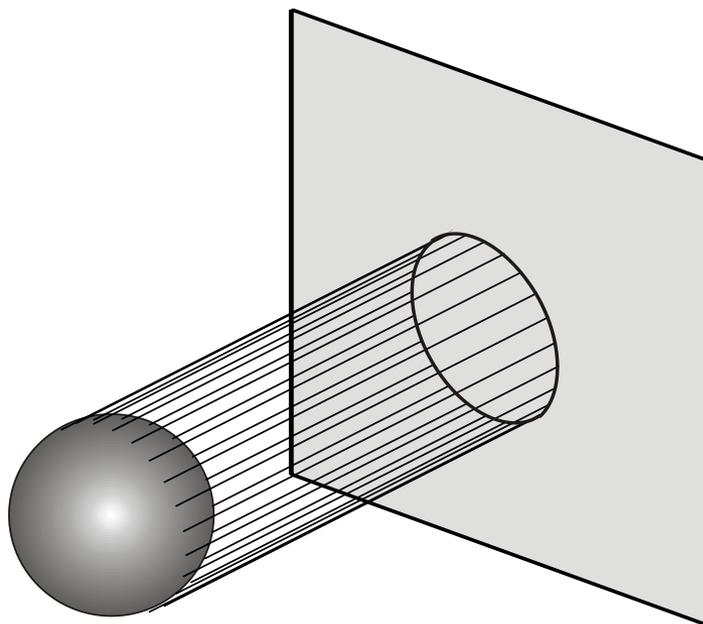
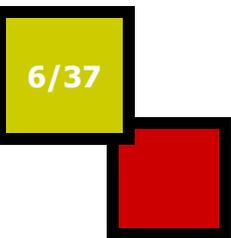


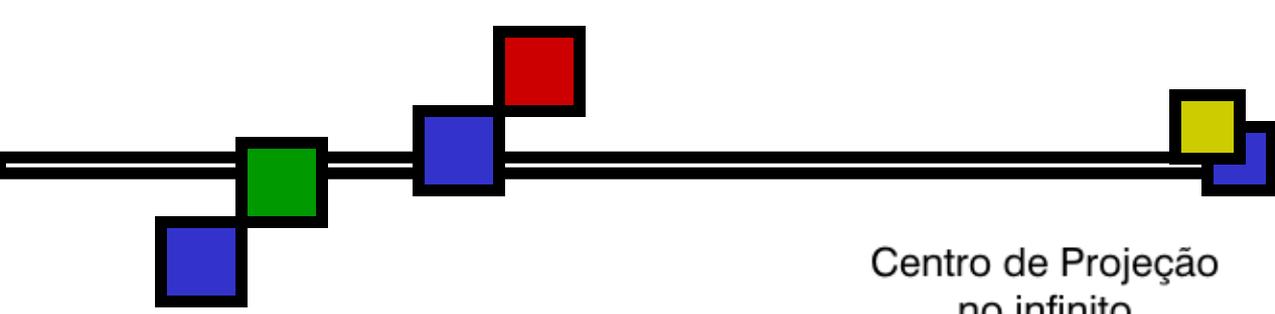
Afastando o centro de projeção...





Projeção Cilíndrica

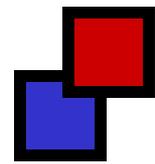
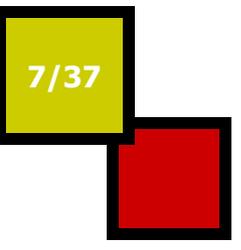
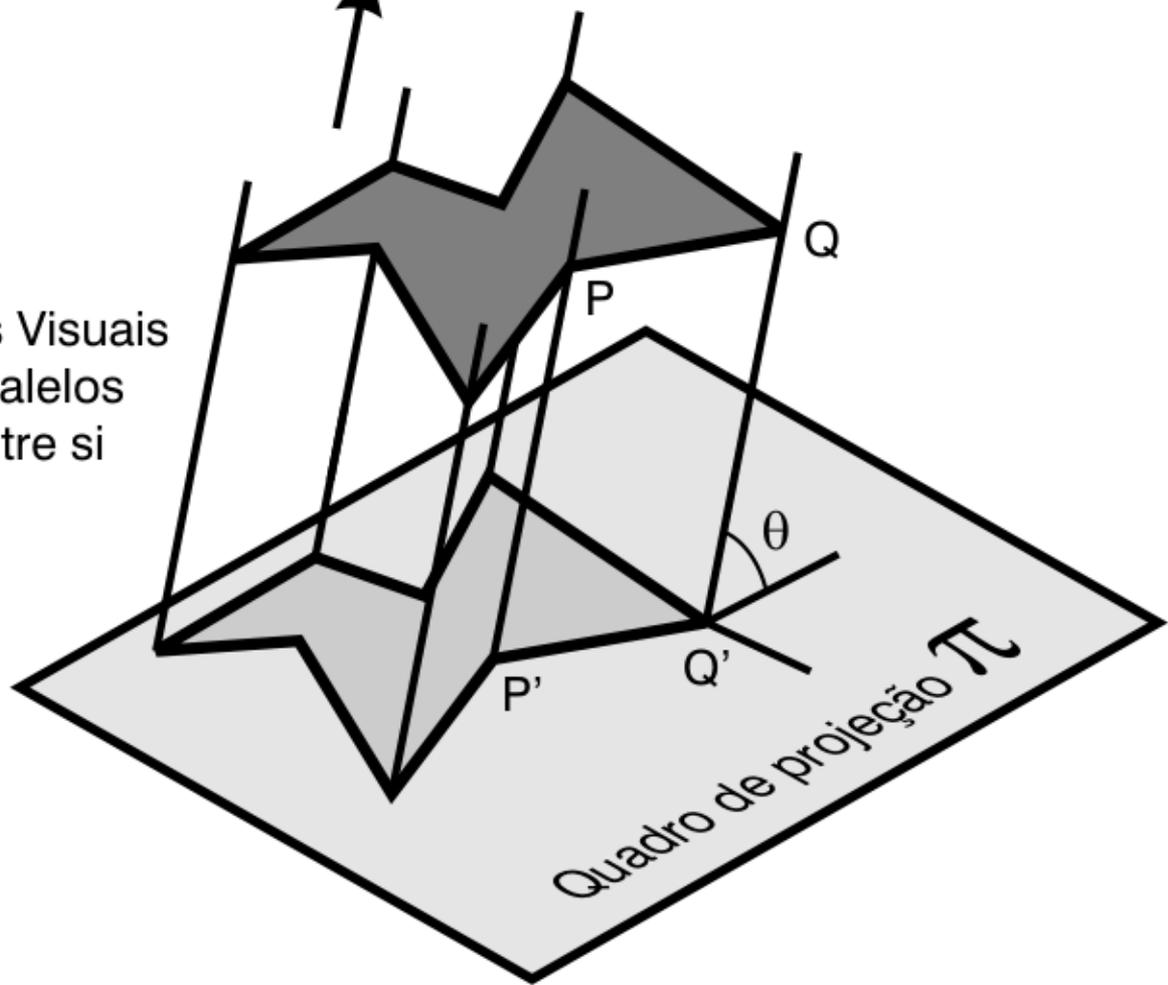




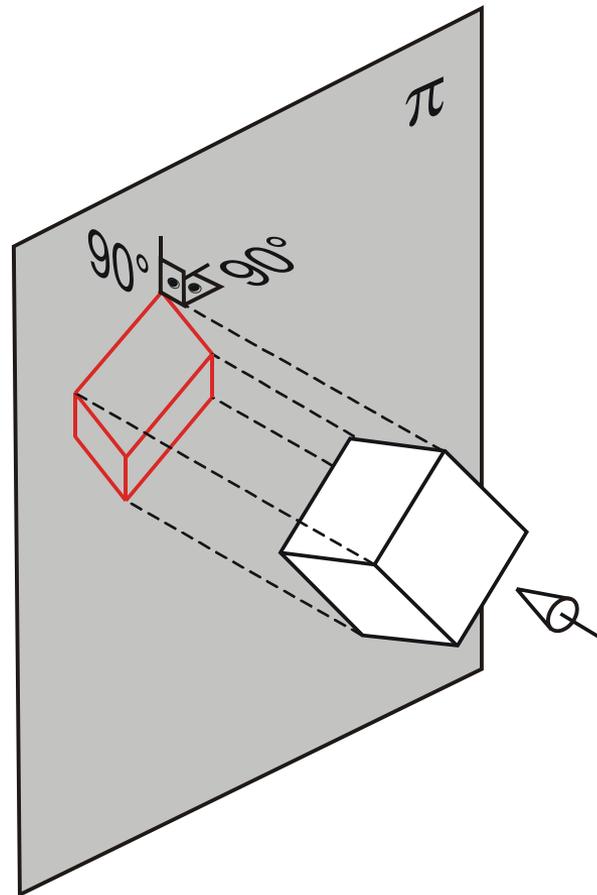
Centro de Projeção
no infinito



Raios Visuais
paralelos
entre si

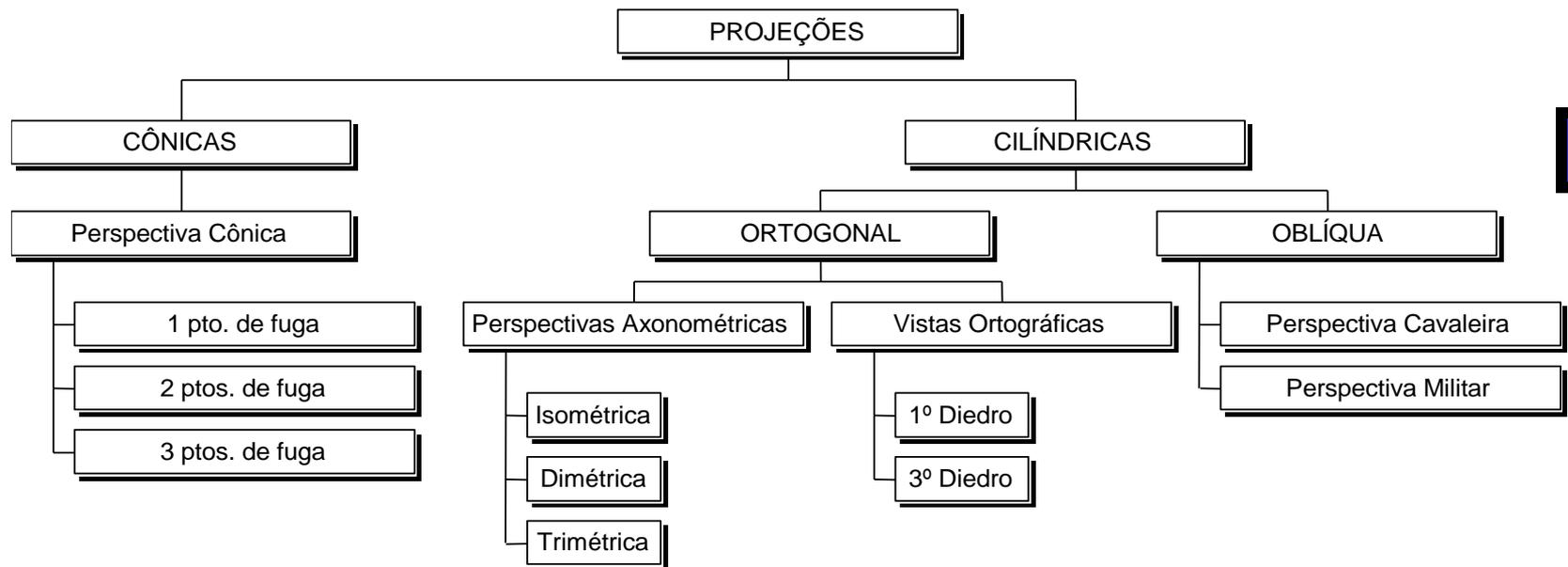


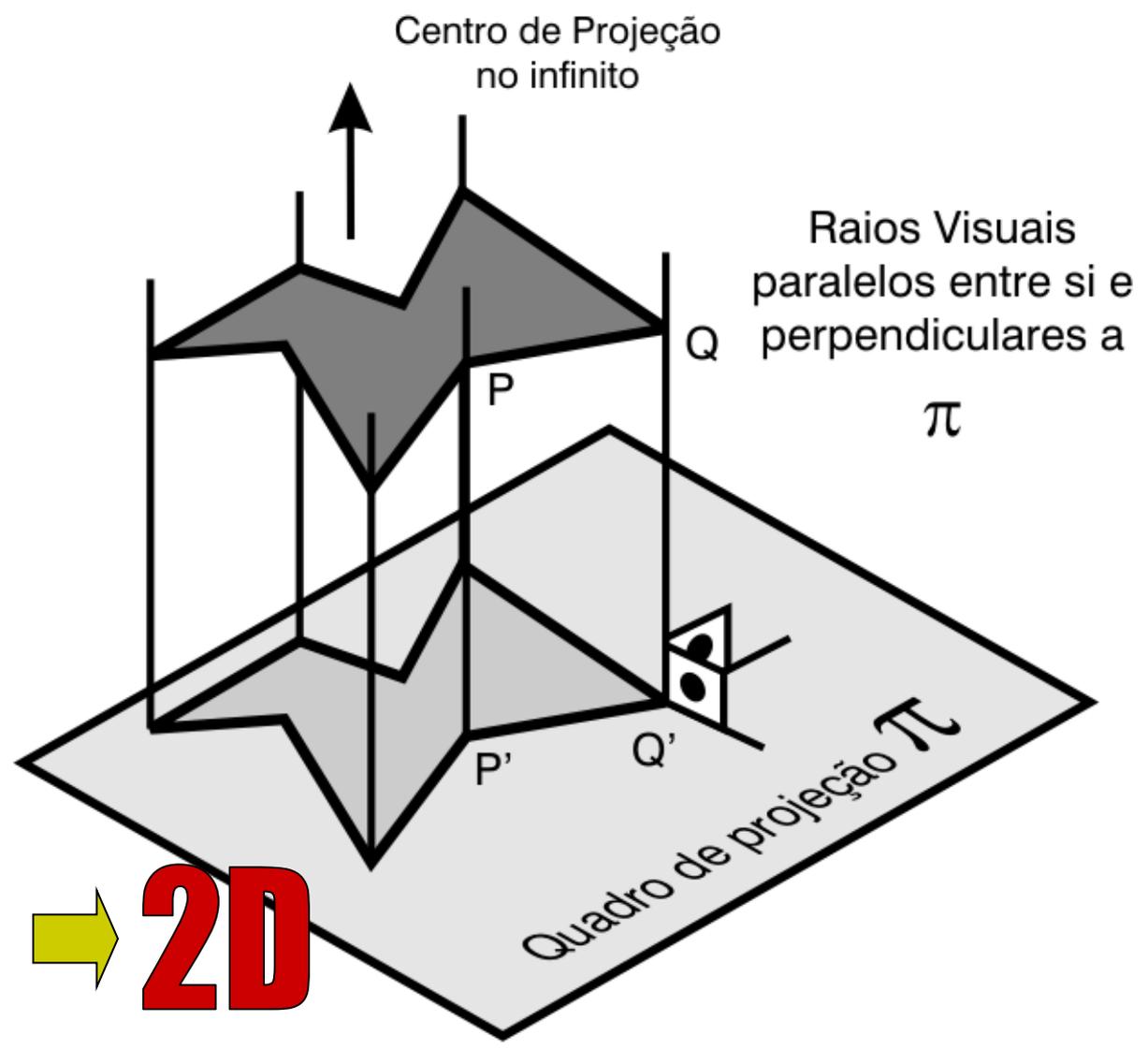
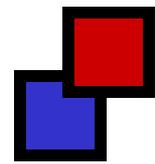
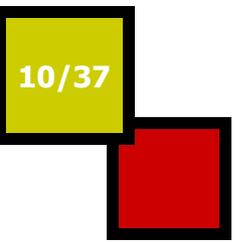
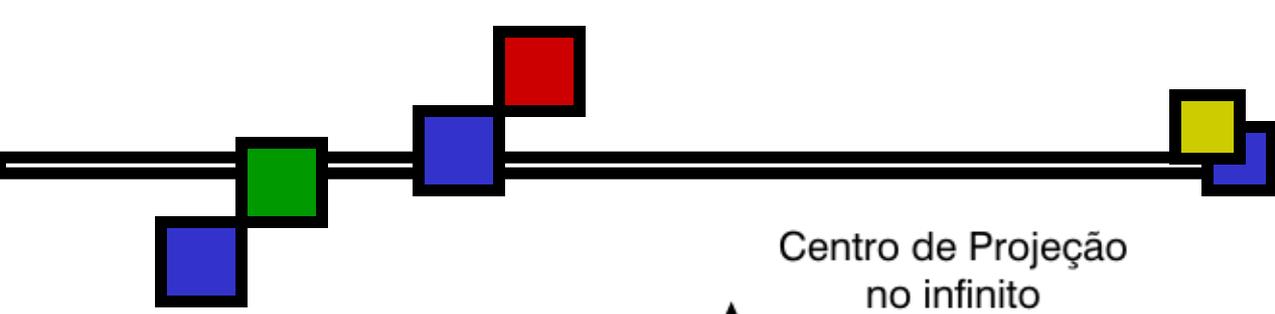
Projeção Cilíndrica Ortogonal



Projeção e Perspectivas

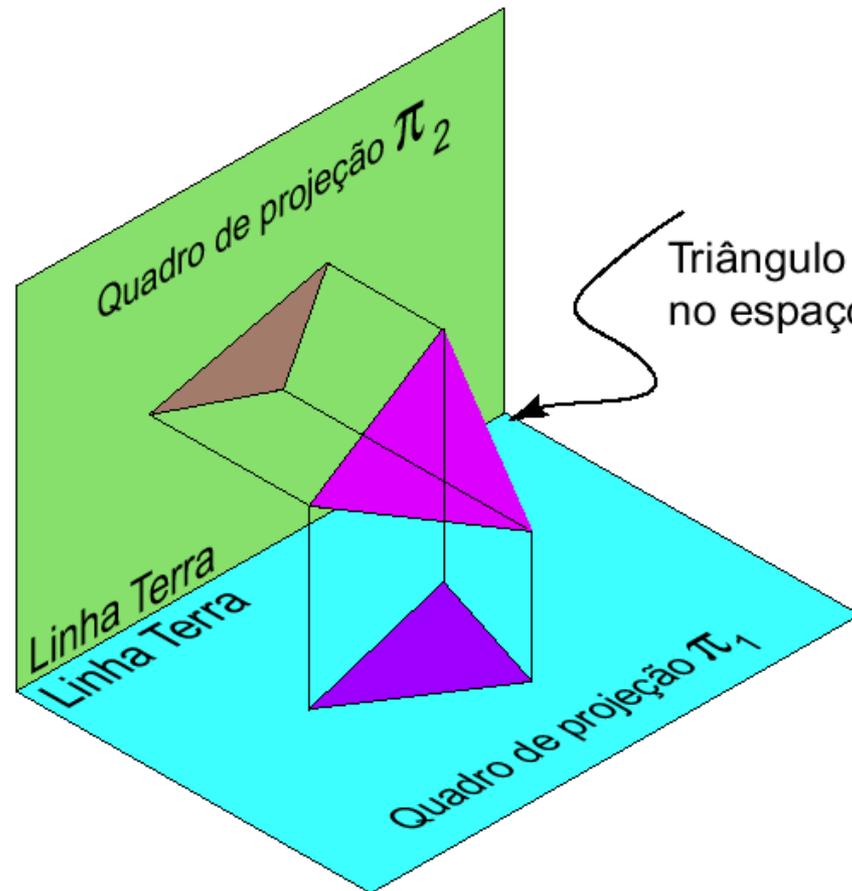
9/37



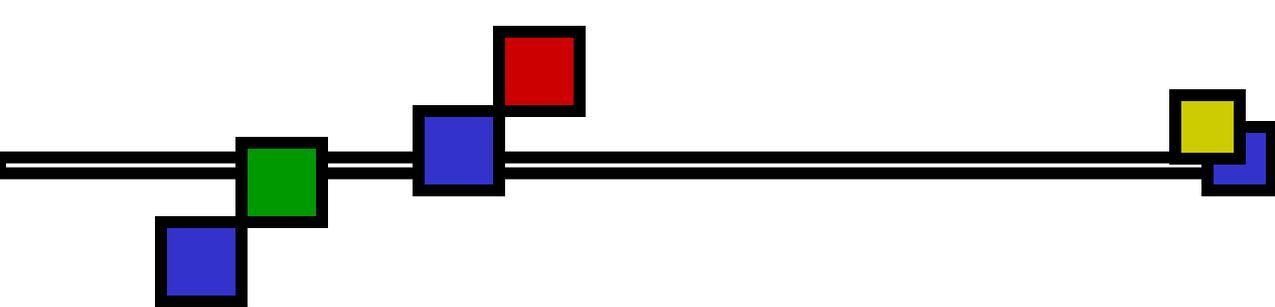


3D → **2D**

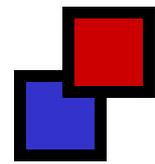
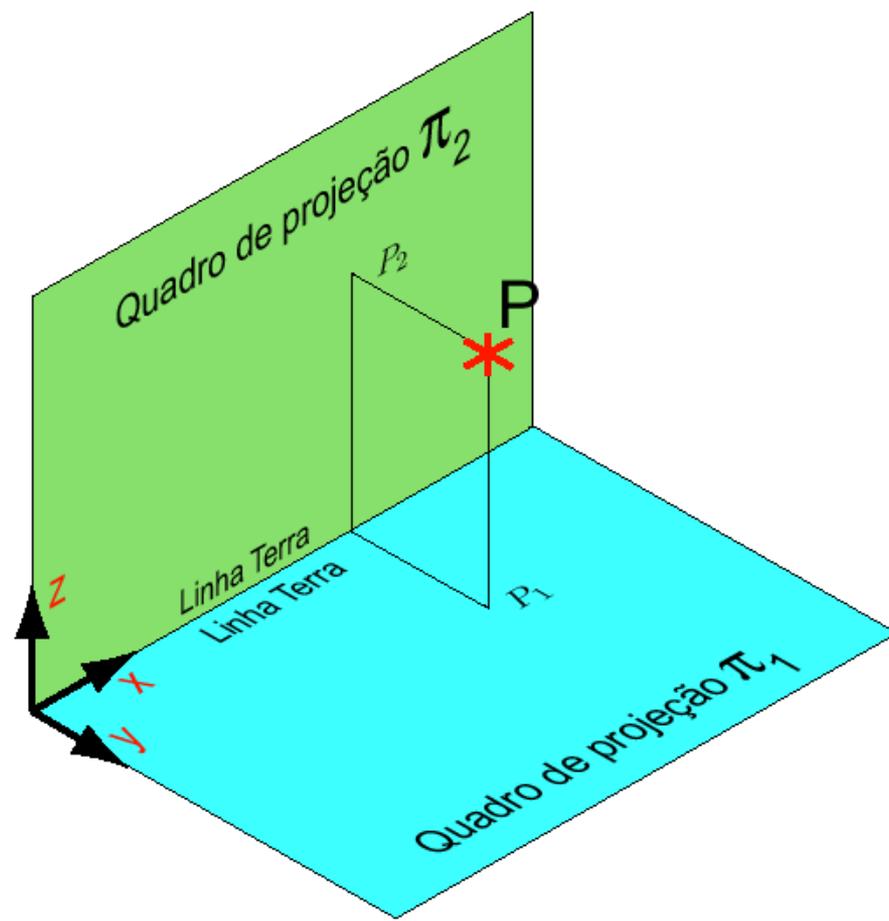
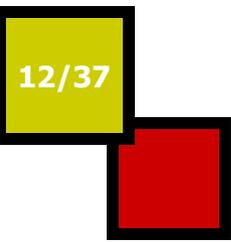
Sistema de Projeção Mongeano

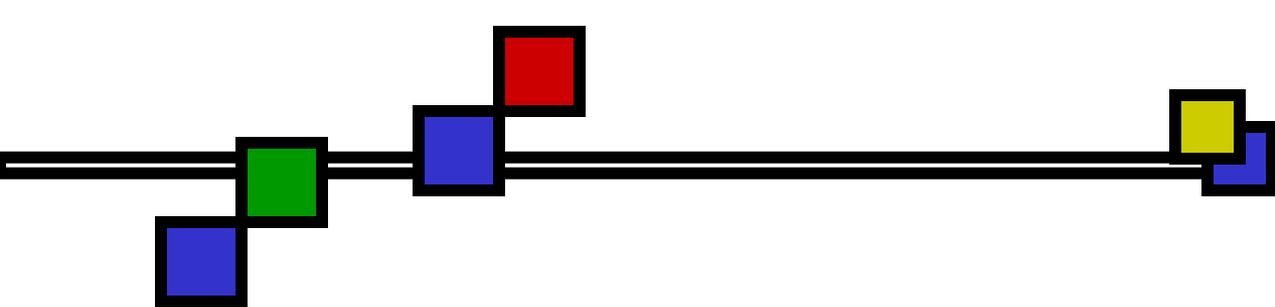


Triângulo
no espaço

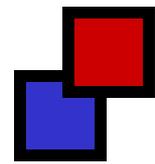
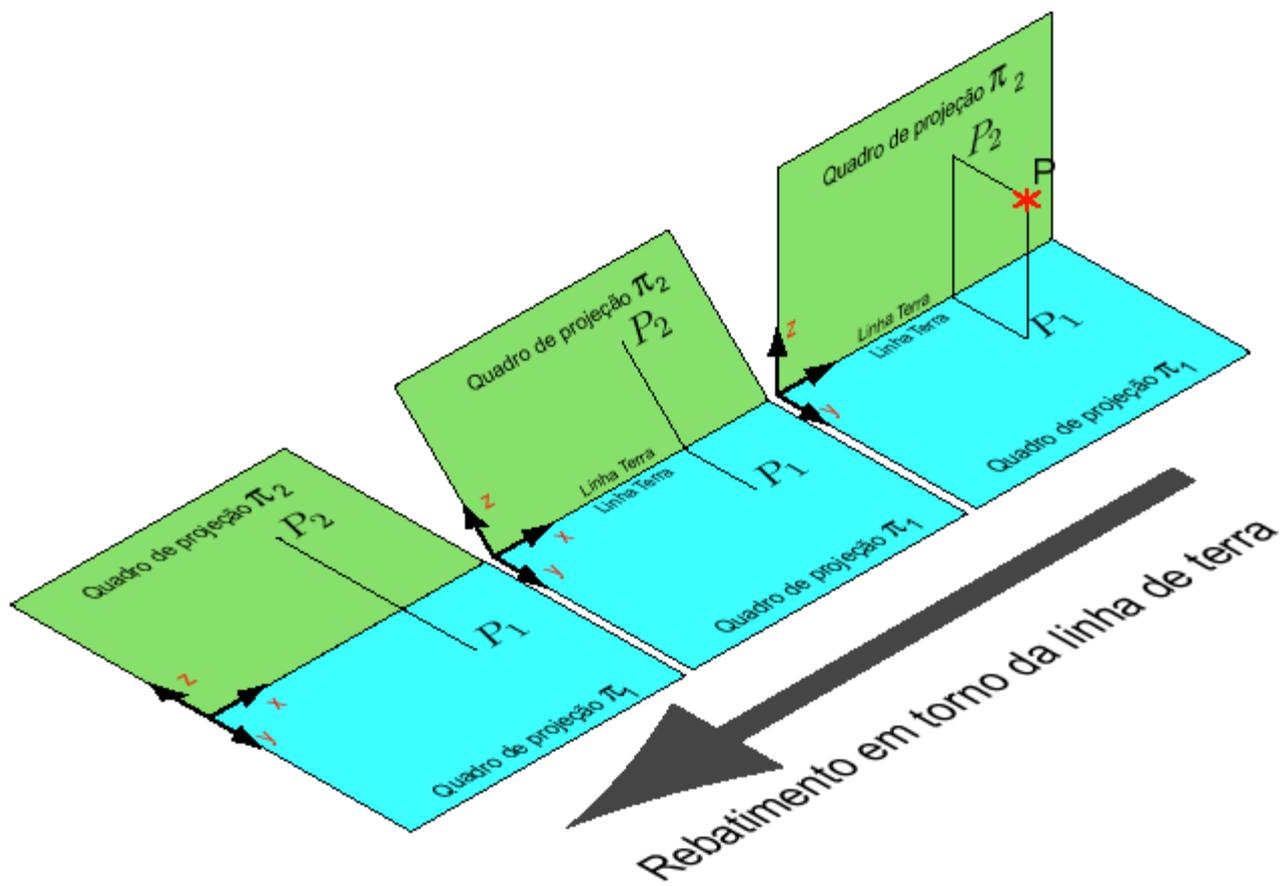
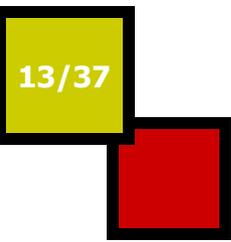


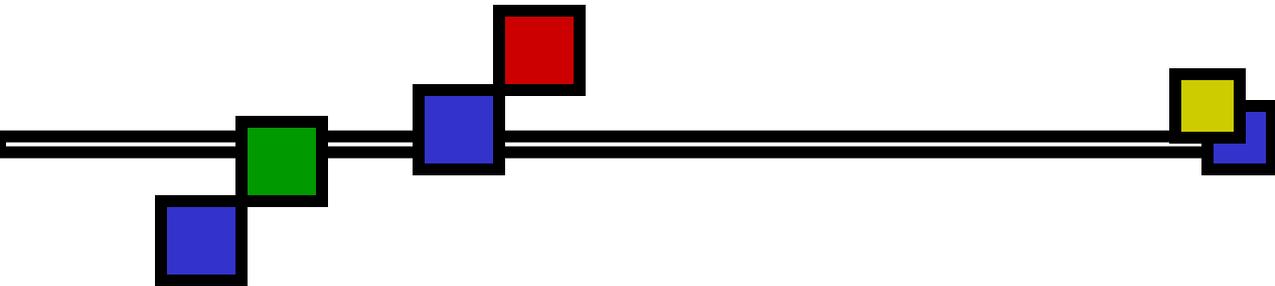
Projeção de pontos



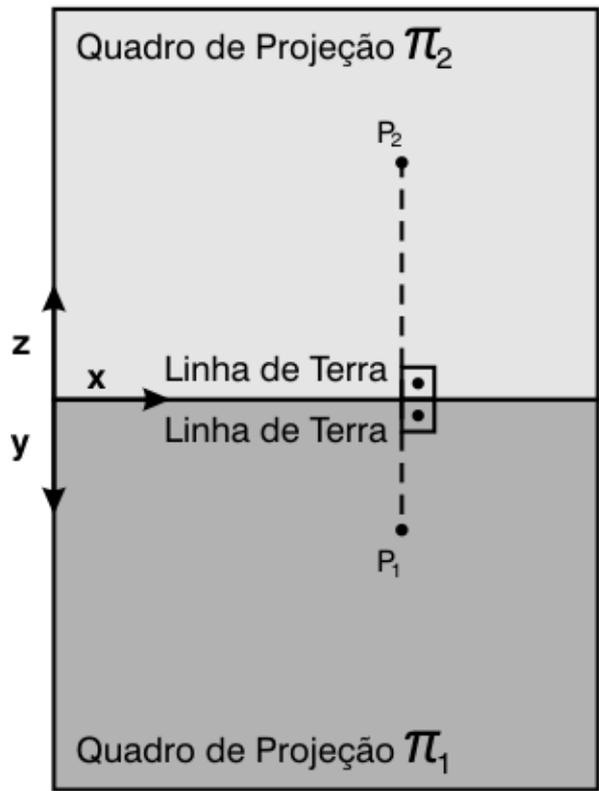
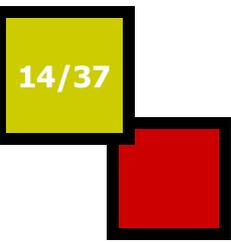


Rebatimento no plano

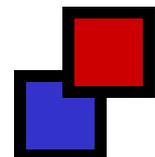
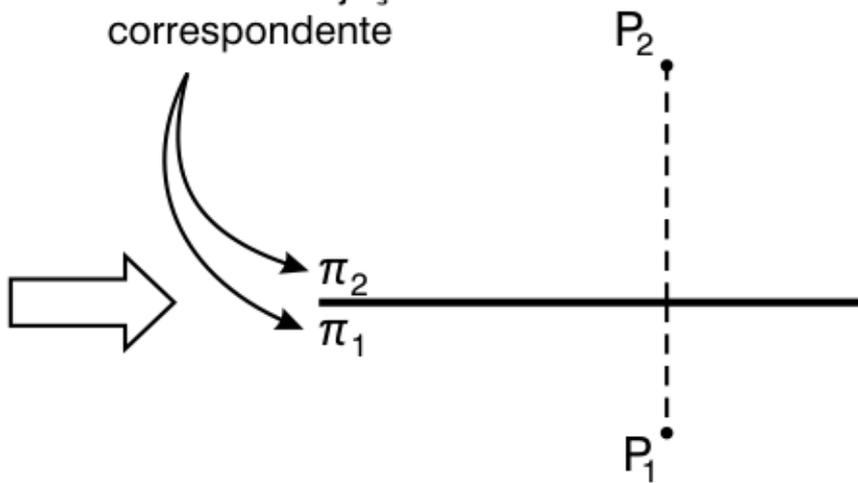


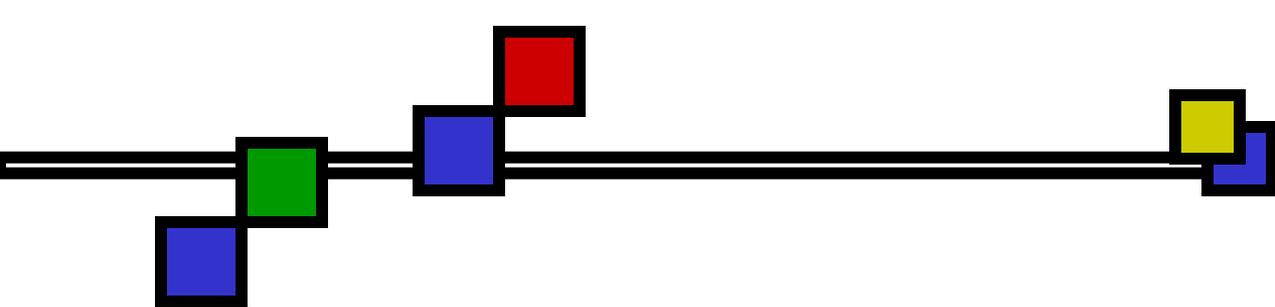


Épura

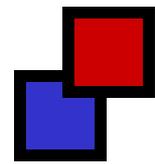
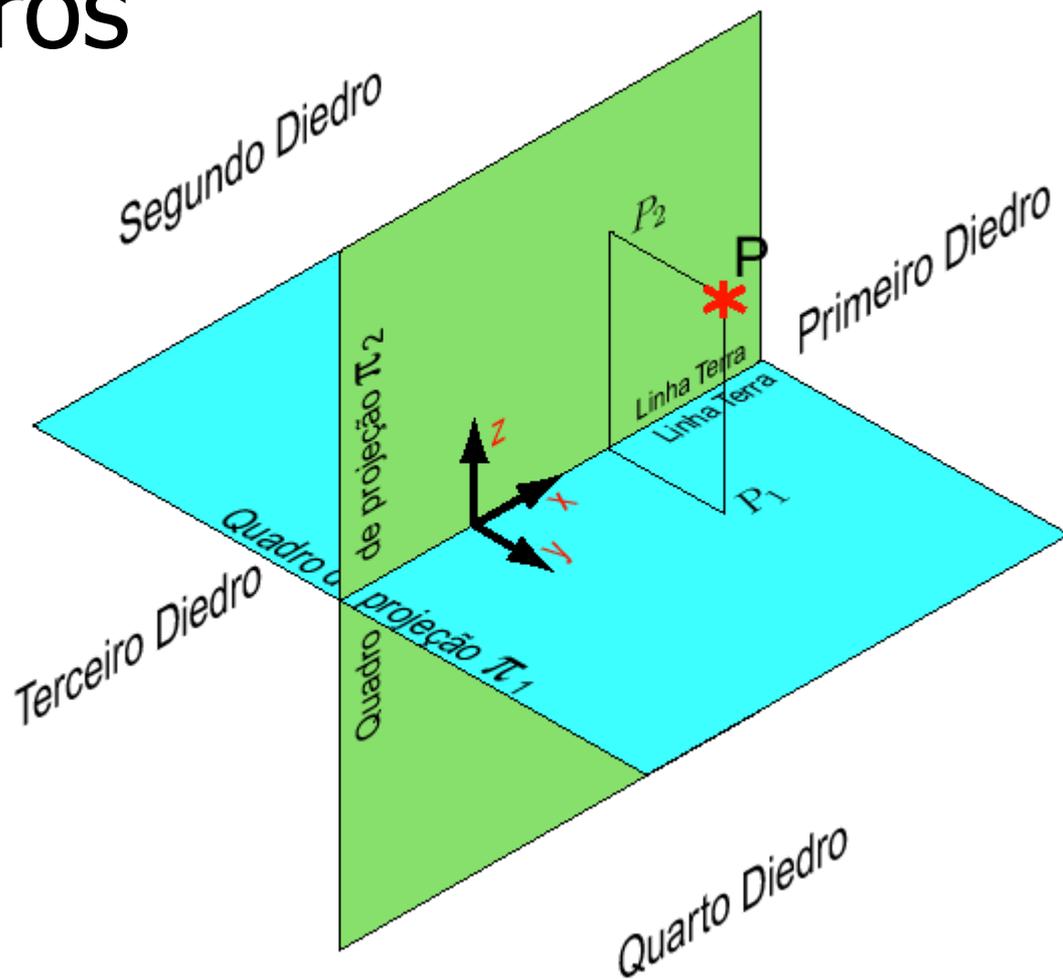
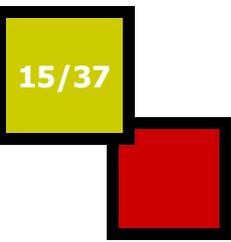


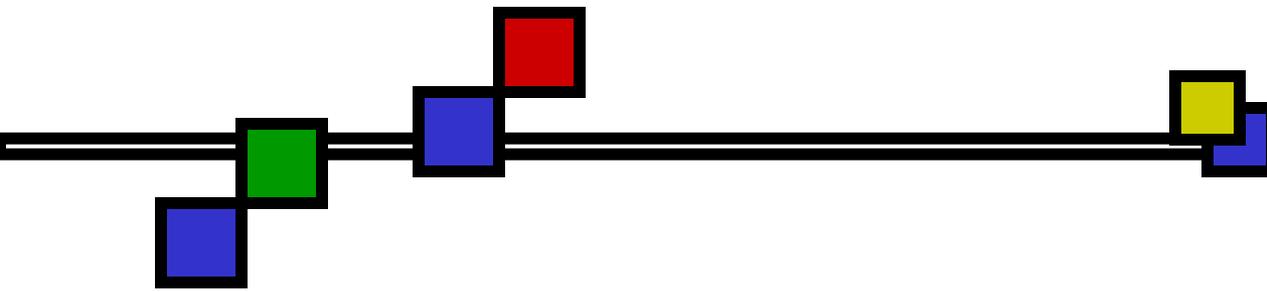
indicadores da parte positiva do Plano de Projecção correspondente



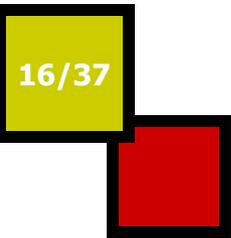


Diedros

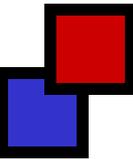


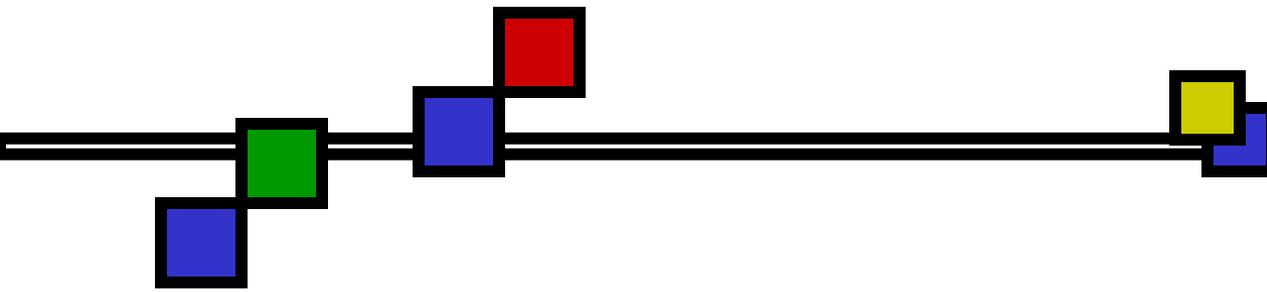


Exercício 1

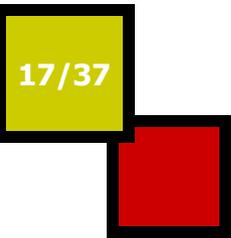


Exercício 1: Um ponto pode estar em qualquer um dos quatro diedros Faça quatro Épuras indicando a posição de pontos nos quatro diedros diferentes.

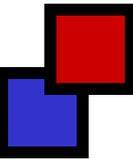




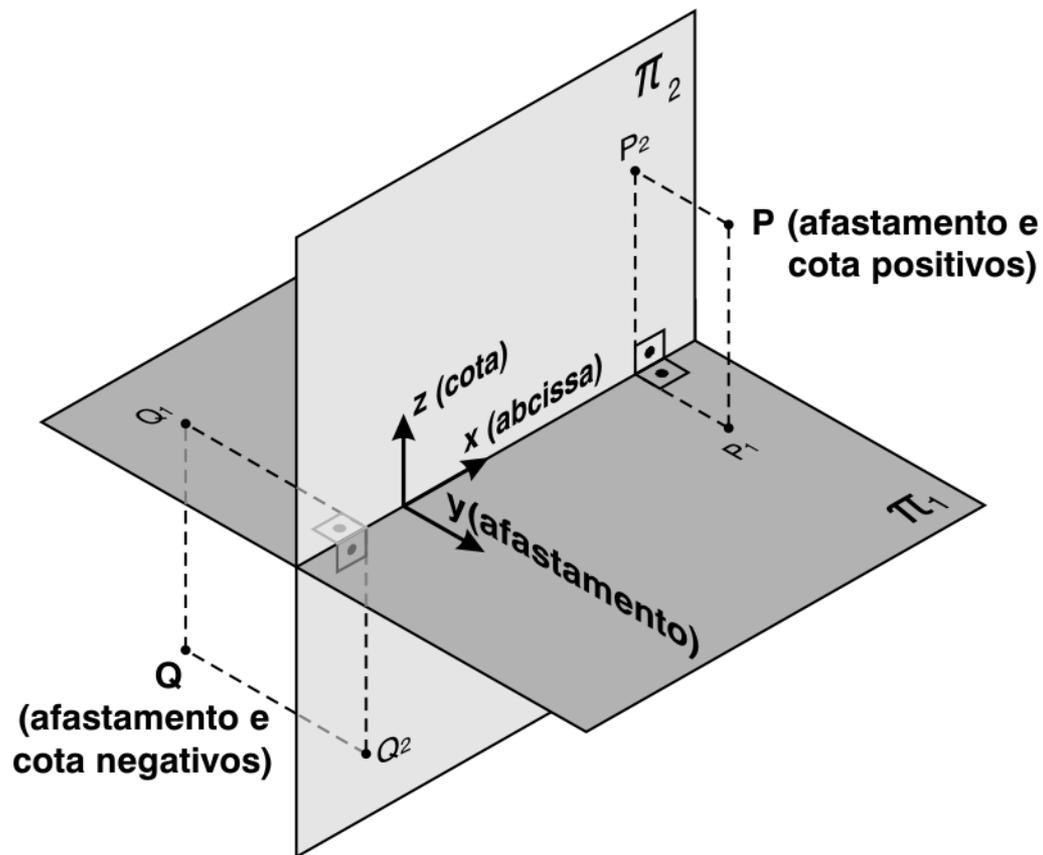
Exercício 2



Exercício 2: Escreva uma justificativa simples para o fato das projeções de um ponto estarem sobre uma reta perpendicular à Linha de Terra.



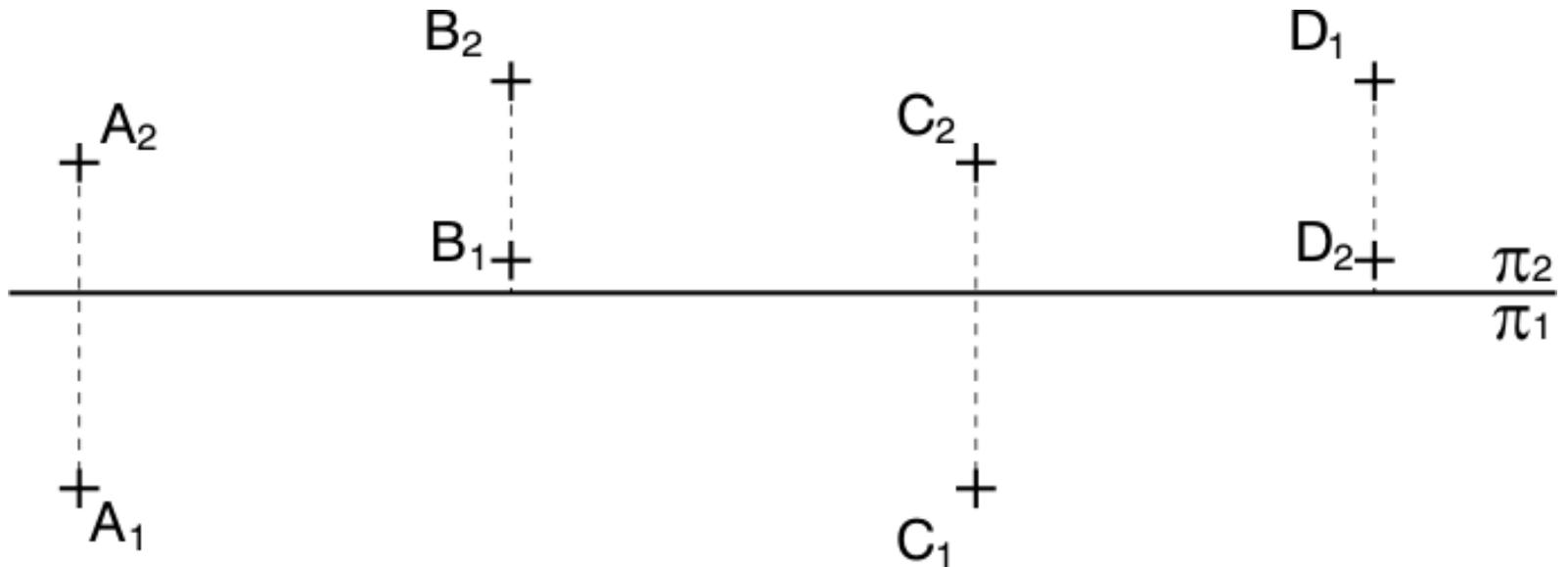
Cota, Afastamento e Abscissa

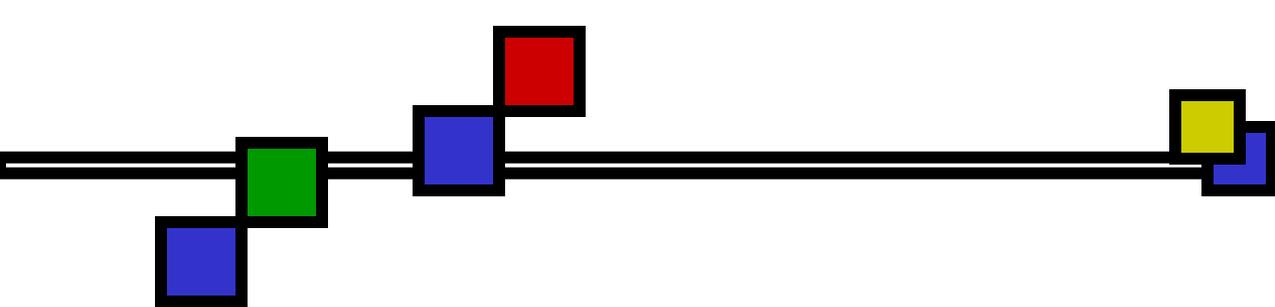


Exercício 3

Exercício 3: Os pontos A , B , C e D são dados em Épura. Determinar:

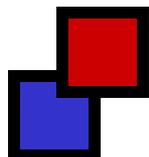
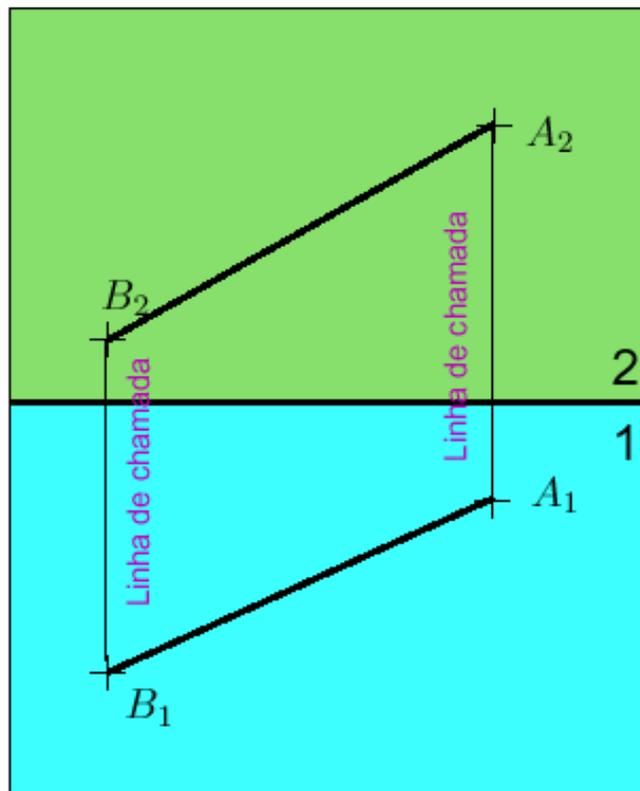
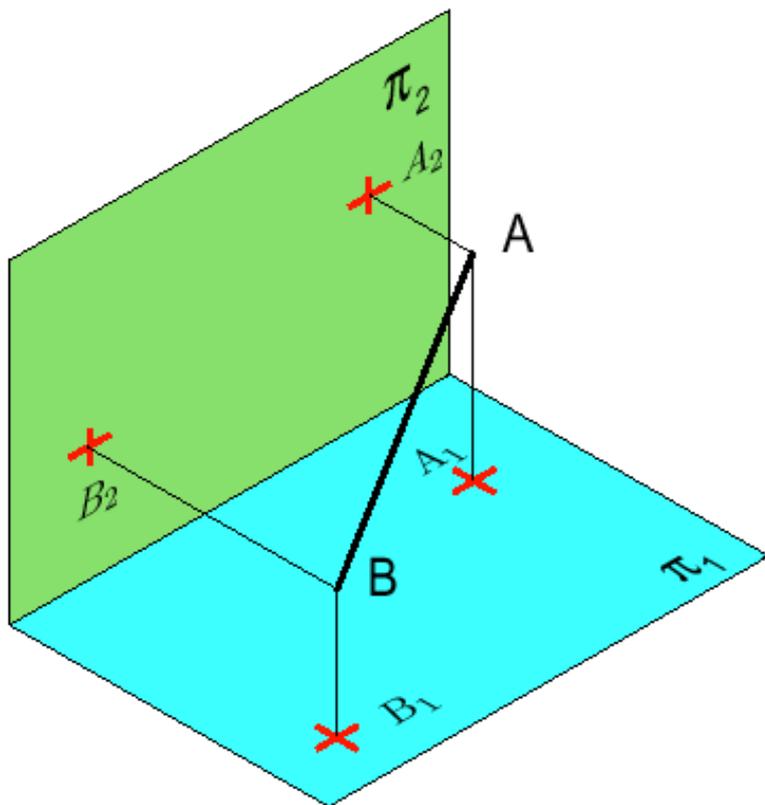
- As projeções dos pontos A' e B' simétricos de A e B com relação ao Plano Horizontal de projeção.
- As projeções dos pontos C' e D' , simétricos de C e D com relação ao Plano Vertical de projeção.

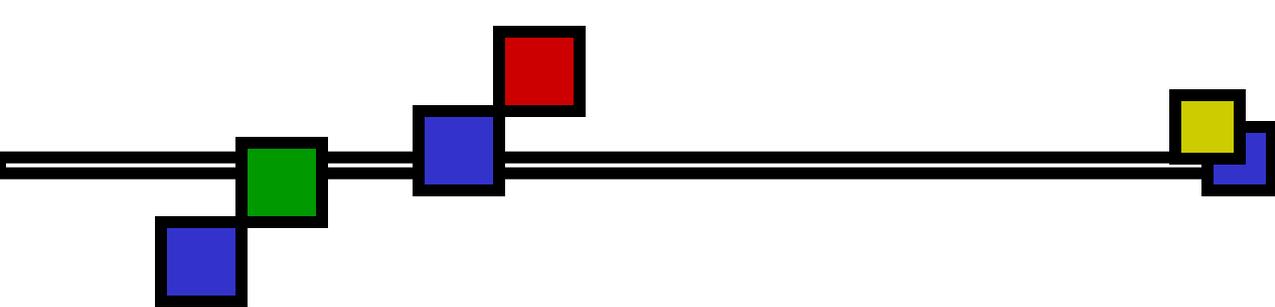




Reta

20/37

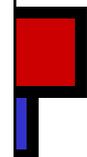
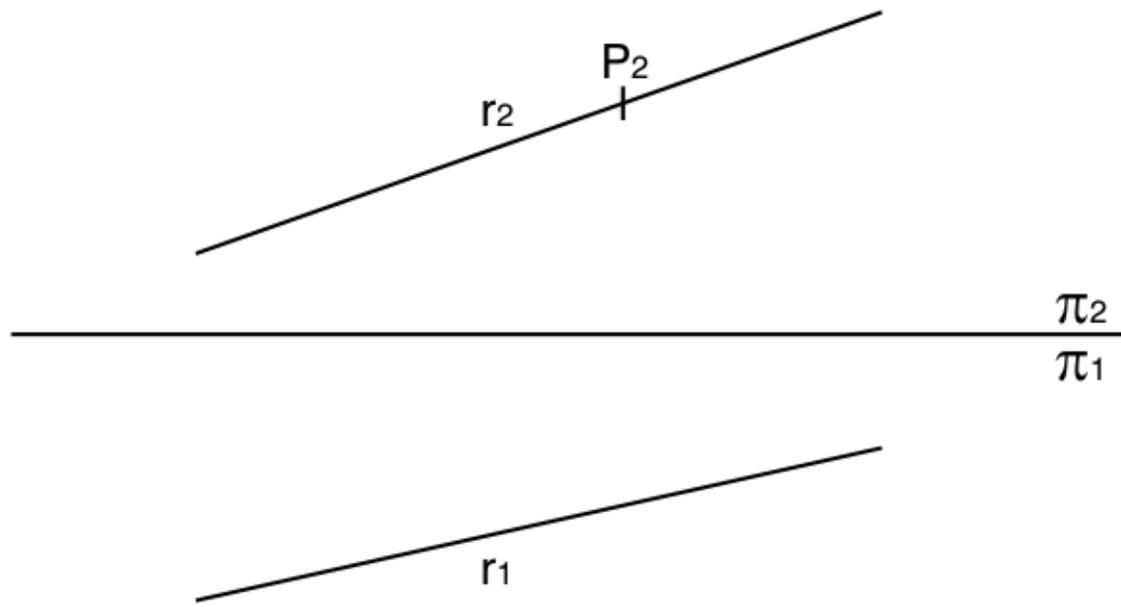


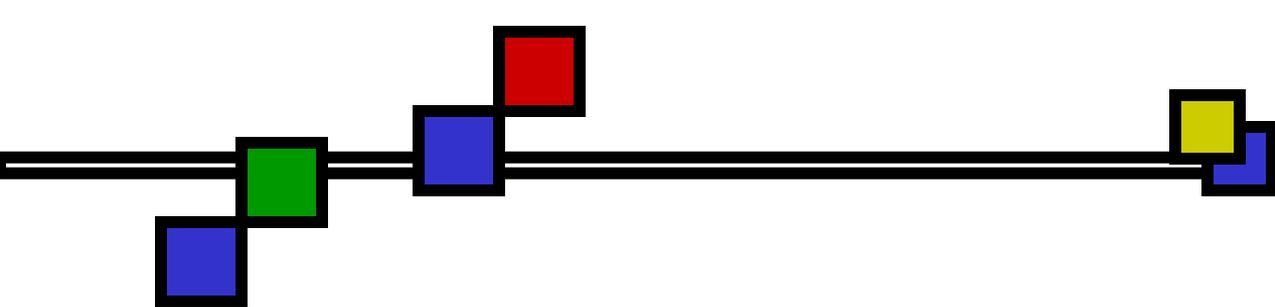


Exercício 4

21/37

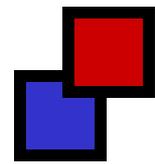
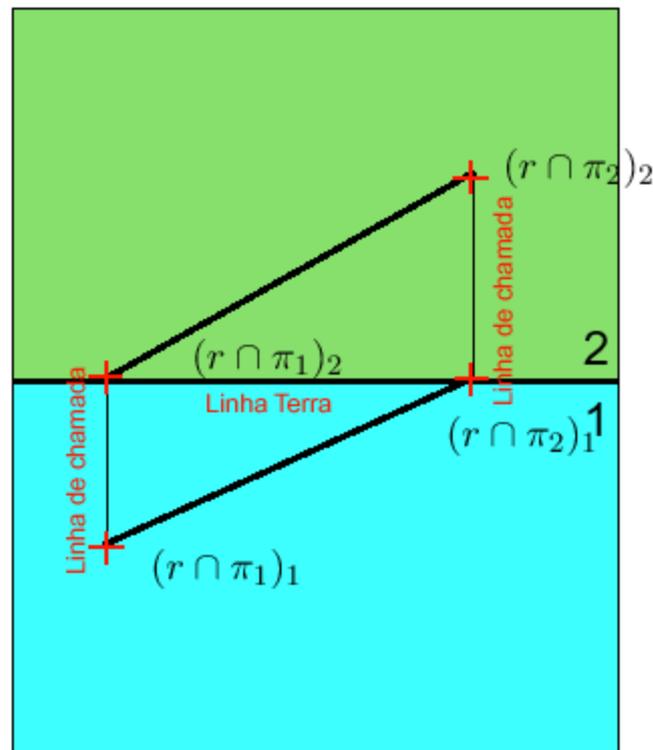
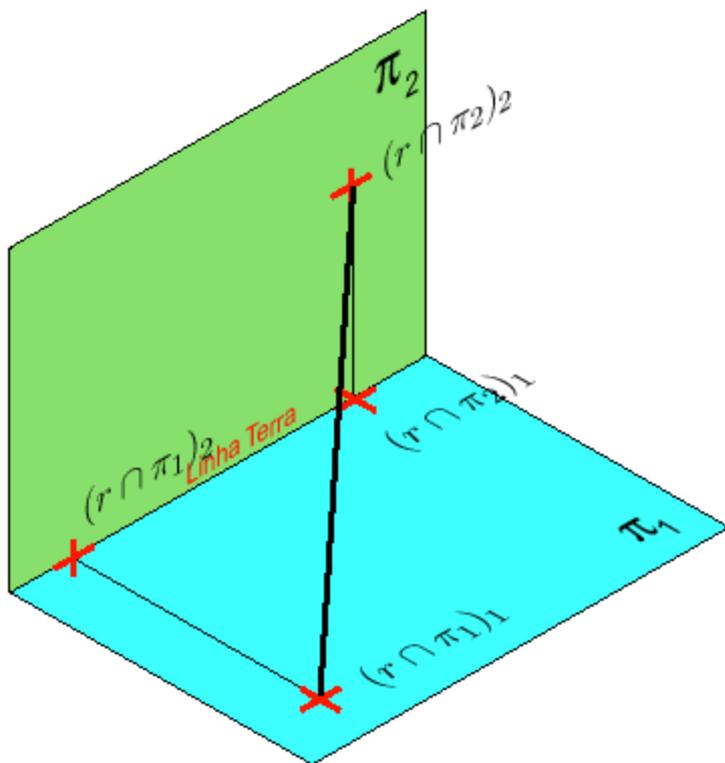
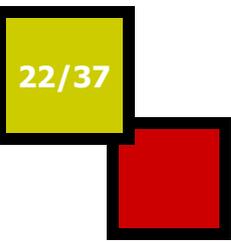
Exercício 4: São representados em Épura uma reta r e uma projeção do ponto $P \in r$. Determinar a projeção do ponto P em π_1 .

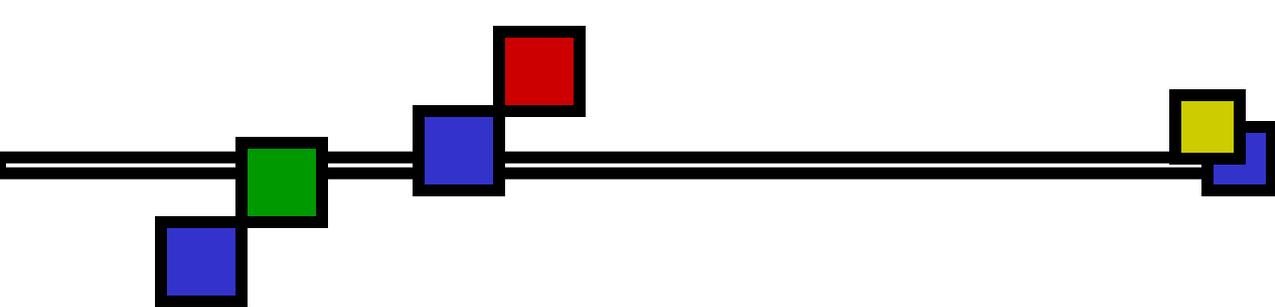




Traços de uma reta

(traço = intersecção)

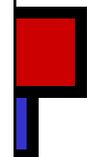
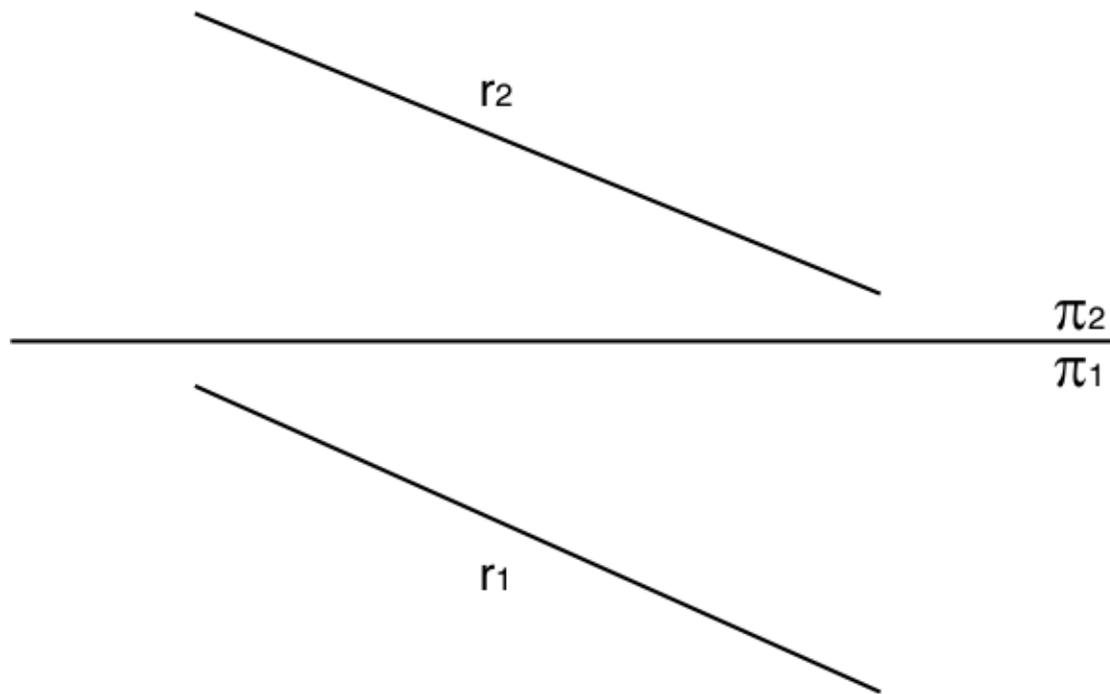




Exercício 5

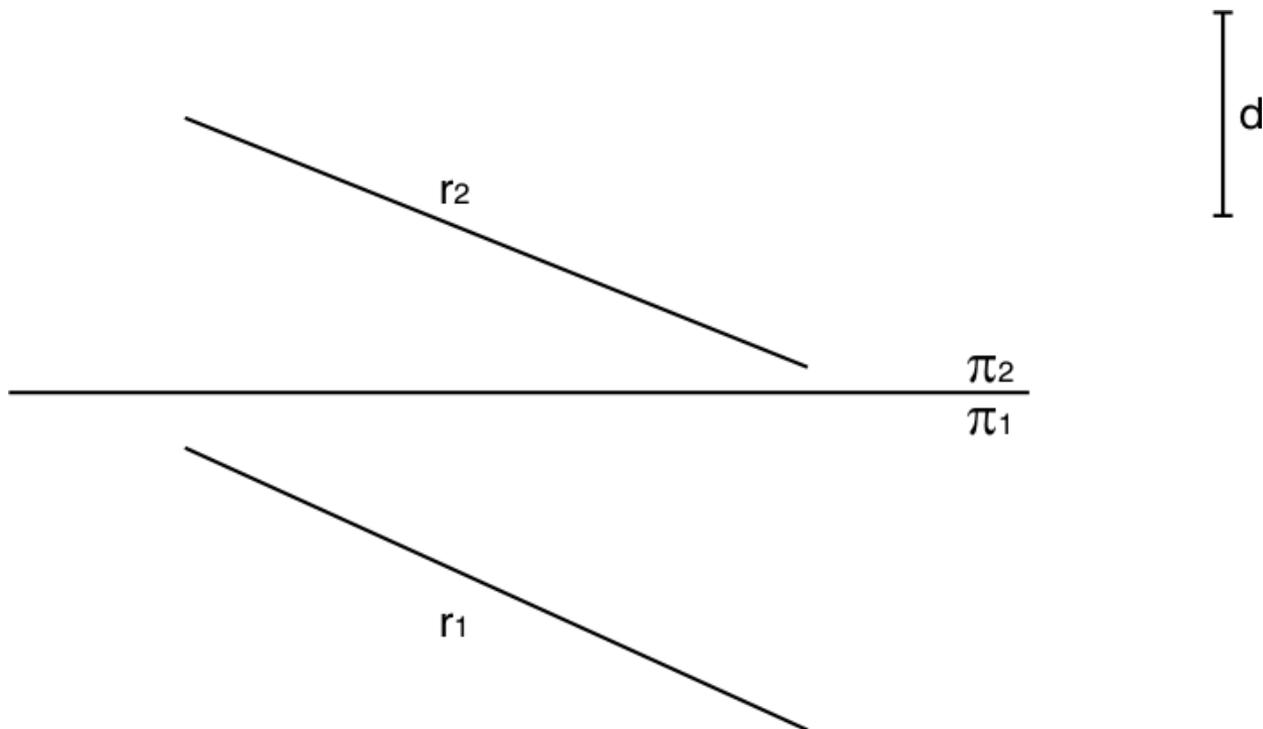
23/37

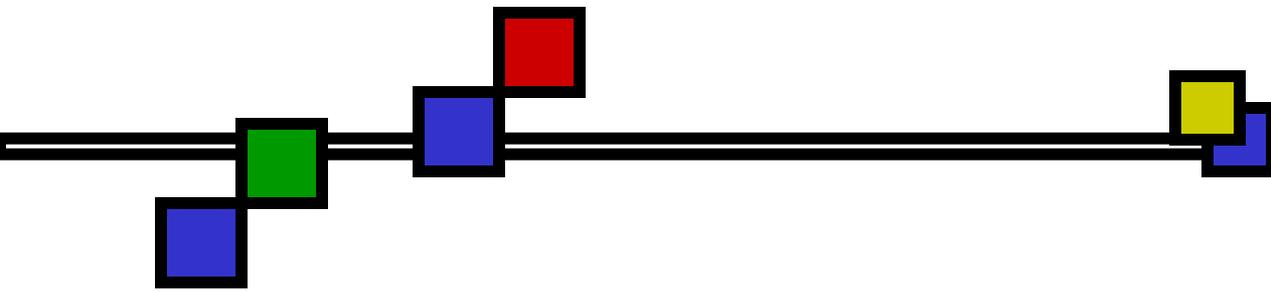
Exercício 5: Determinar os Traços da reta r no Plano Horizontal π_1 e vertical π_2 . Se você acertou, deve ter marcado no papel quatro pontos.



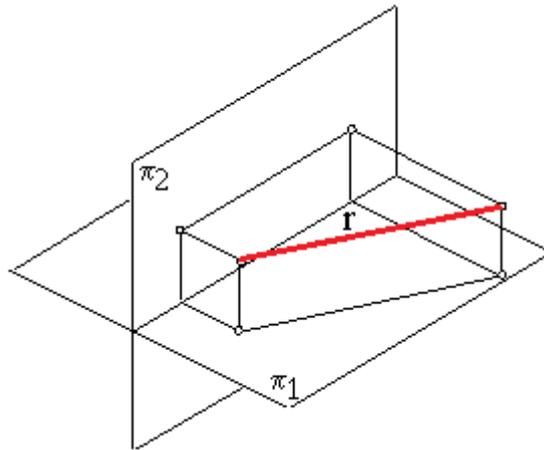
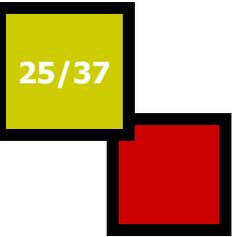
Exercício 6

Exercício 6: Determinar os traços da reta r com os Planos de Projeção. Obter na reta r o ponto A de afastamento igual ao comprimento d e o ponto B de cota $d/2$.

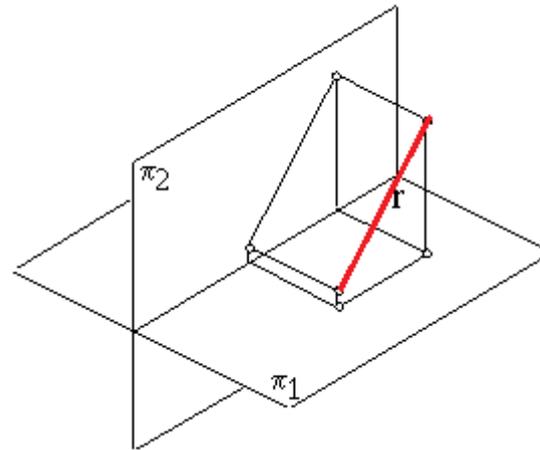




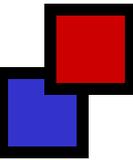
Posições particulares da reta

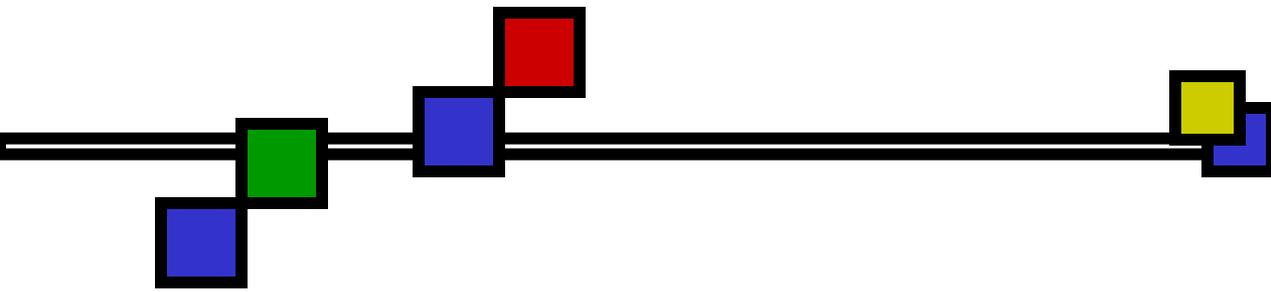


Reta horizontal

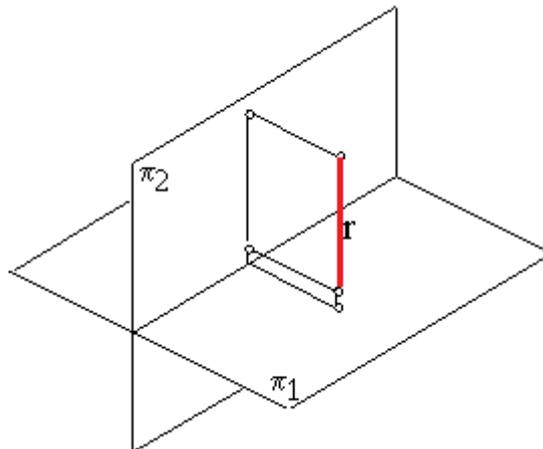
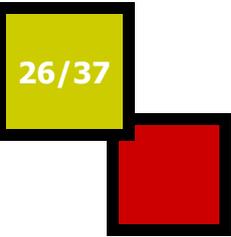


Reta frontal

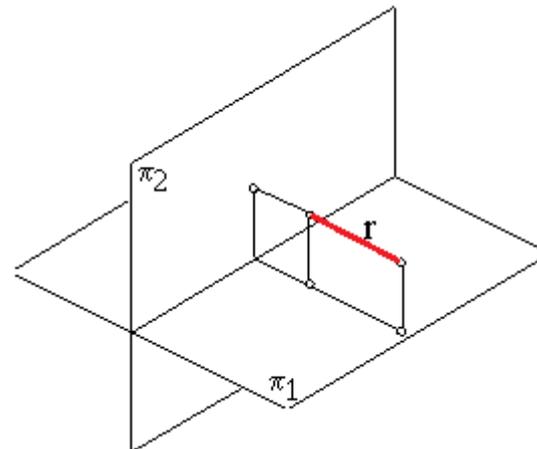




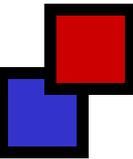
Posições particulares da reta

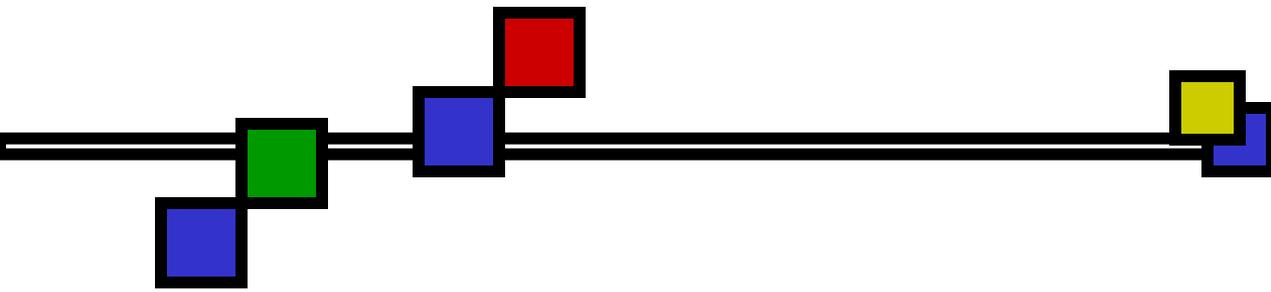


Reta vertical

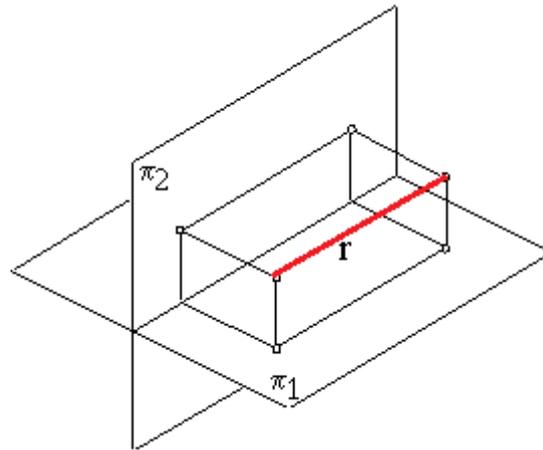
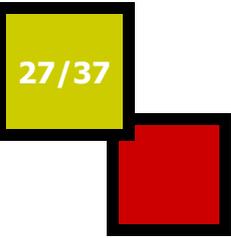


Reta topo

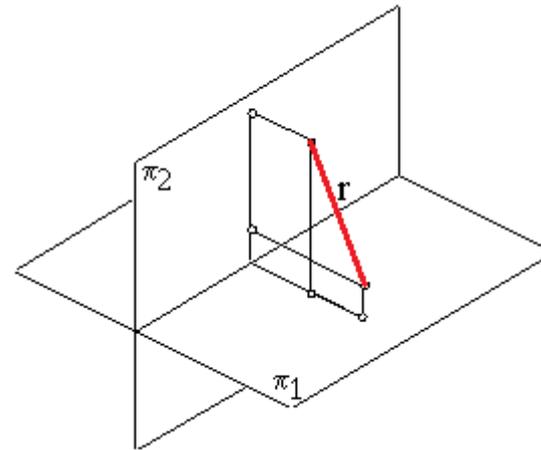




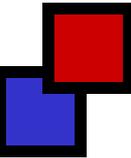
Posições particulares da reta

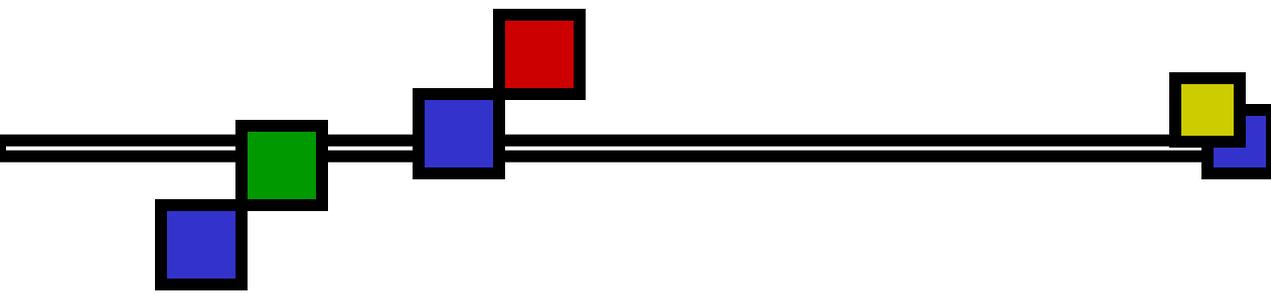


Reta fronto-horizontal

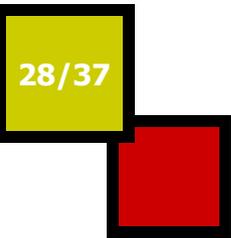


Reta perfil





Exercícios para casa



Resolver para a próxima aula, os exercícios de 1, 2, 5, 6 e 7 da apostila.

