



Universidade de Brasília



UnB **Gama**
O novo endereço da Tecnologia.

Caderno de Exercícios (Parte I)

Disciplina: Desenho Industrial Assistido por Computador

Profa. Himilsys Hernández González

Introdução

A disciplina de Desenho Industrial Assistido por Computador integra conteúdos básicos de Geometria Descritiva e de Desenho Técnico tradicional, usando ferramentas convencionais (lápiz, instrumentos) e software CAD, especificamente o CATIA®, da Dassault Systemes. Esta disciplina é a base para desenvolver muitas das competências relacionadas com o Design. Um dos objetivos principais da mesma é desenvolver a habilidade de percepção espacial.

As metodologias utilizadas nesta disciplina variam, começando pela tradicional aula expositiva e vinculando esta a aulas práticas onde o aluno tem que desenvolver a autonomia, organização no posto de trabalho, raciocínio e visão espacial. Após o aluno aprender conhecimentos básicos de Desenho Técnico e aplicar os mesmos em pequenos trabalhos individuais usando as ferramentas convencionais como lápis, réguas, esquadros, compasso, o aluno passa a usar como ferramenta o software CATIA.

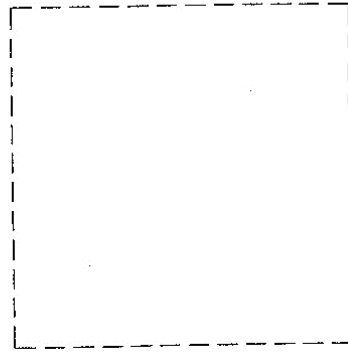
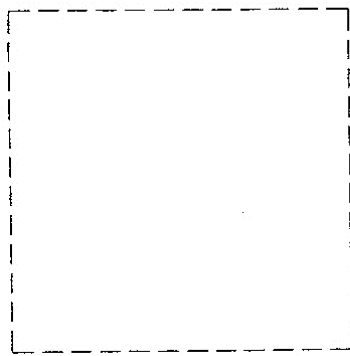
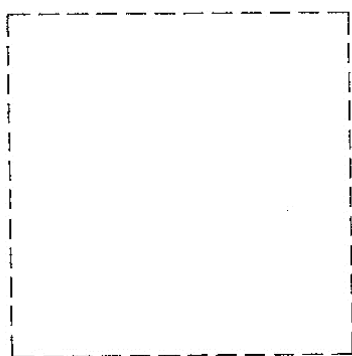
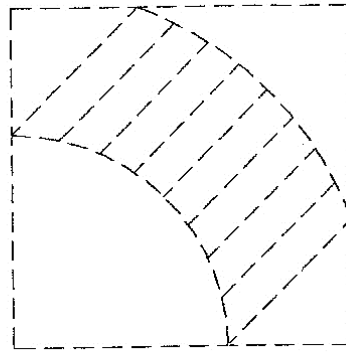
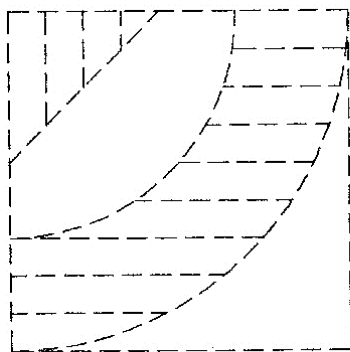
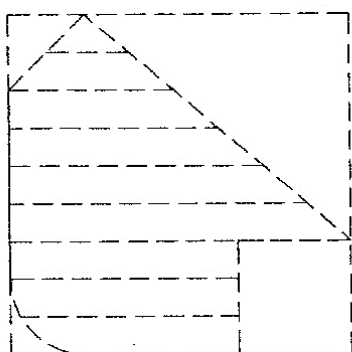
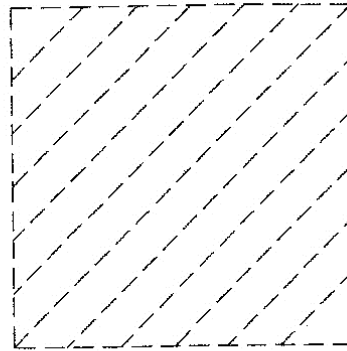
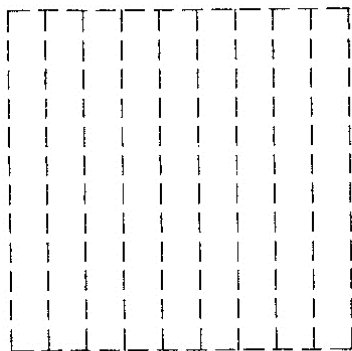
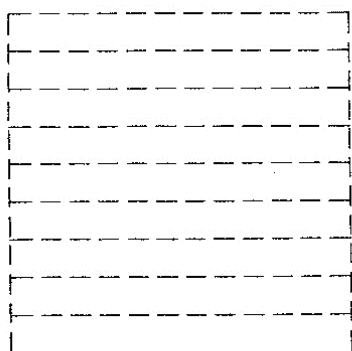
Neste caderno encontram-se exercícios que ajudarão ao aluno a desenvolver conhecimentos e habilidades necessárias na área de Projeto de Produtos. Estes exercícios são de **caráter obrigatório** e estão vinculados aos diferentes conteúdos trabalhados na disciplina.

Caderno Parte I- Conteúdo:

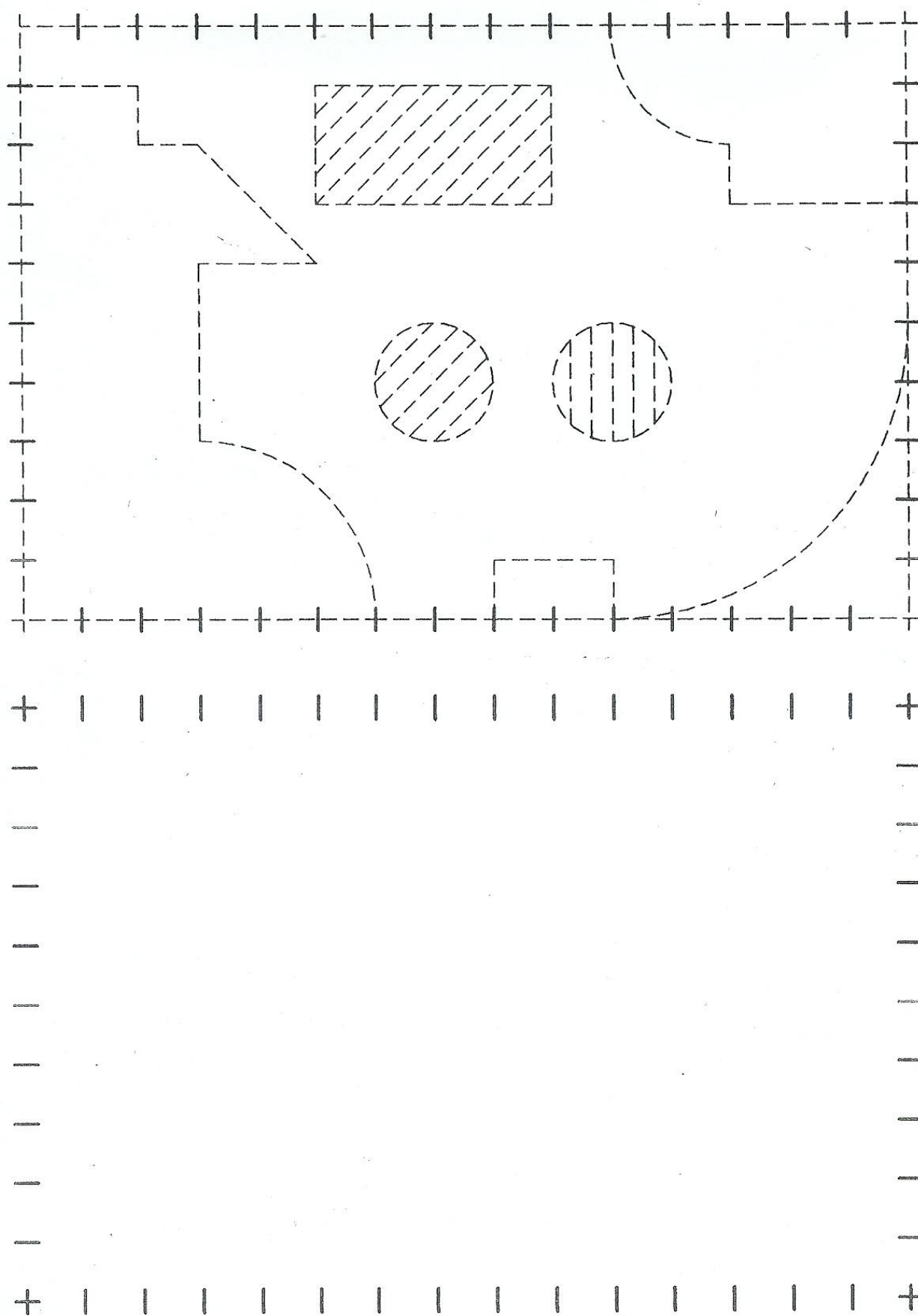
- **Construções Geométricas**
- **Introdução ao DIAC**
- **Normas Técnicas**

Construções Geométricas.

1. Desenho a mão livre: Com o lápis passe por cima de cada linha nos desenhos das duas primeiras fileiras e reproduza posteriormente cada desenho nas últimas fileiras.

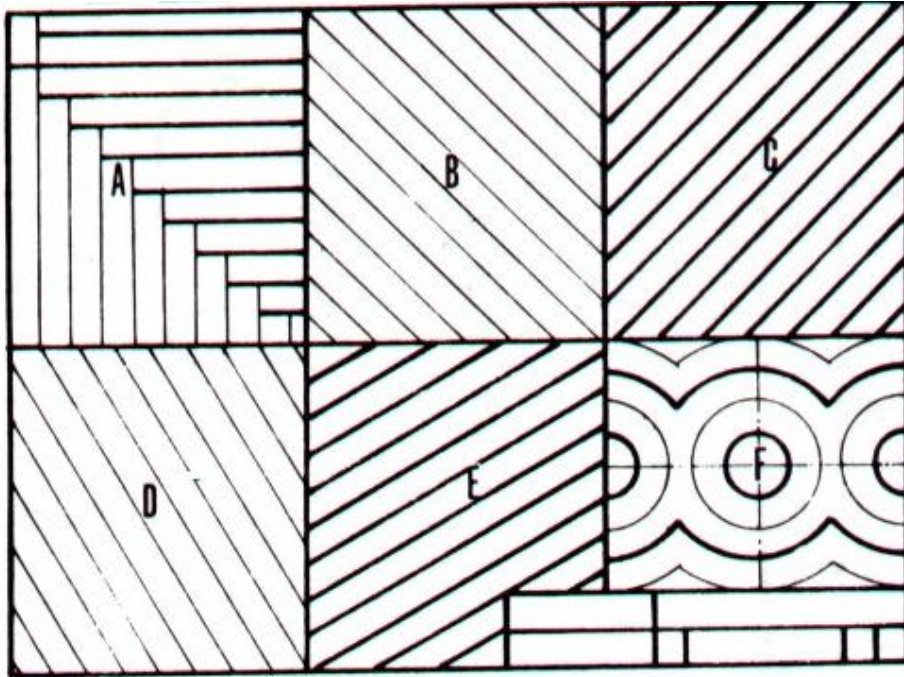


2. Desenho a mão livre: Passe o lápis por cima das linhas tracejadas para reforçar o desenho que se encontra no primeiro quadro. Reproduza o desenho no quadro em branco. Leve em consideração as proporções.

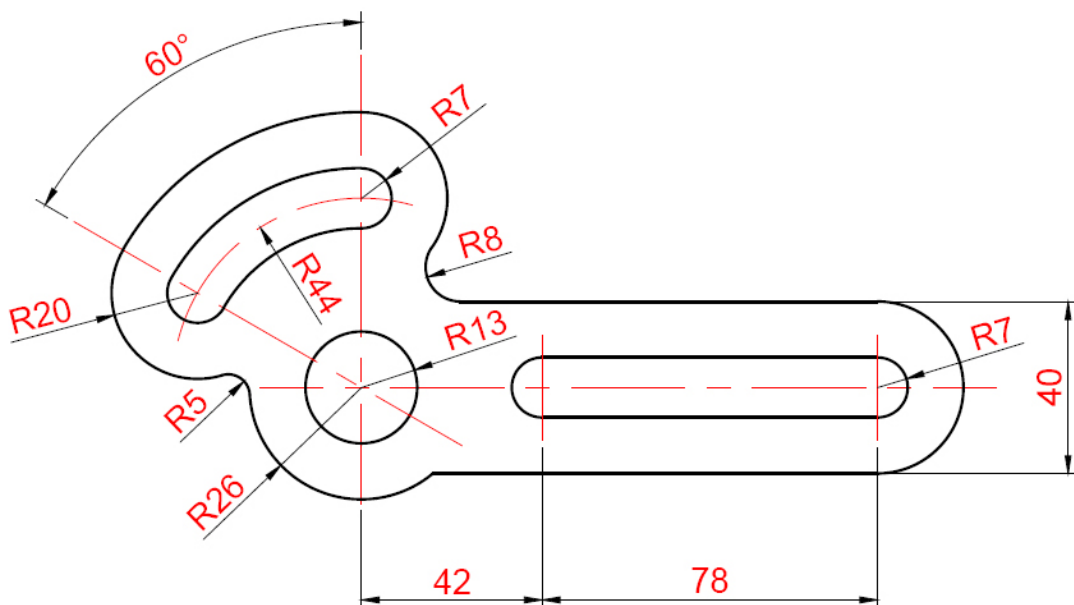
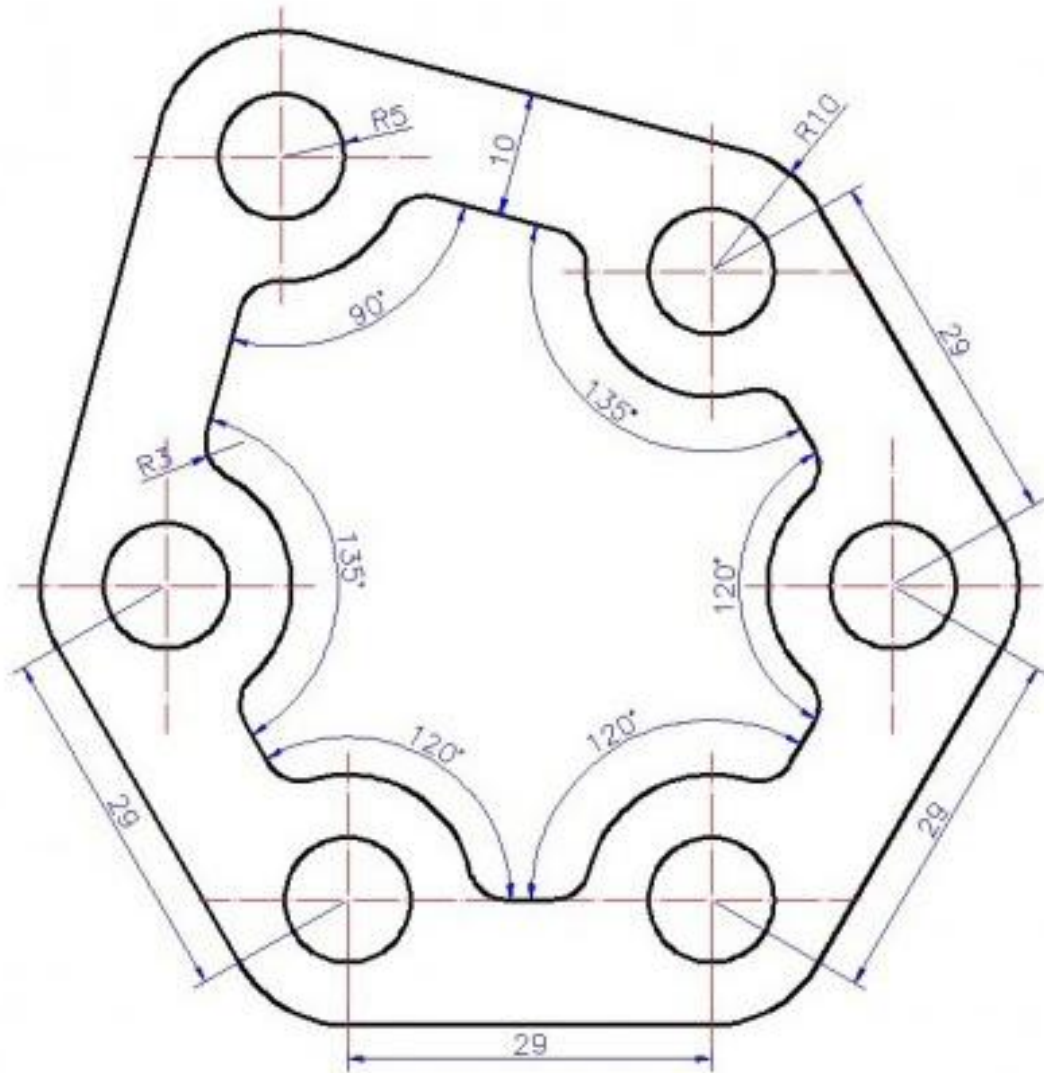


3. Desenho a mão livre: Desenhe na folha as linhas obedecendo as orientações abaixo (Veja o exemplo). **Separação entre as linhas igual a 7 mm.**

- A – Horizontal e vertical com linhas grossas;
B - 45° com linhas finas;
C - 45° com linhas grossas;
D - 60°, com a horizontal, com linhas finas;
E - 30°, com a horizontal, com linhas grossas;
F – Circunferências e arcos com linhas finas e grossas



4. Reproduza **com instrumentos** numa folha em branco os seguintes desenhos. Todas as medidas estão em milímetros.

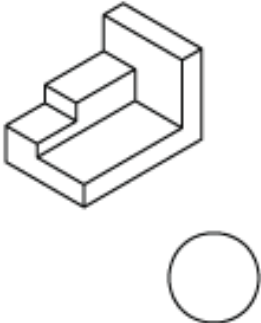
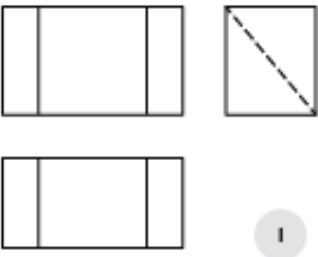
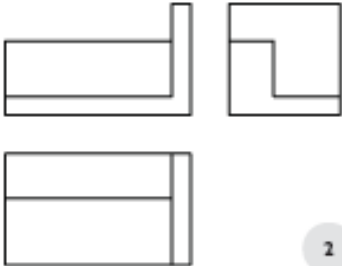
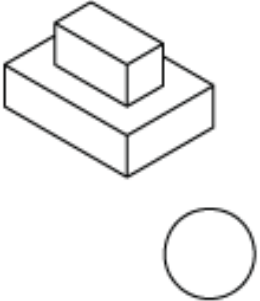
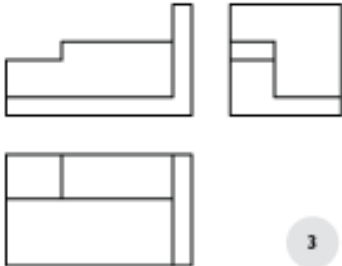
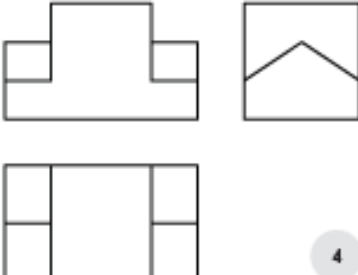
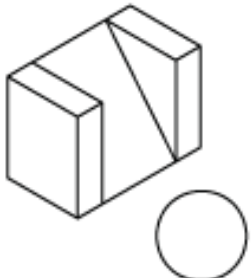
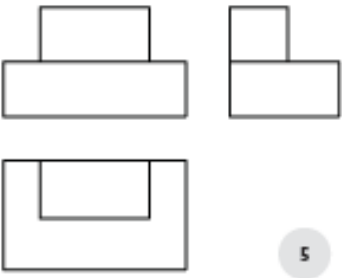
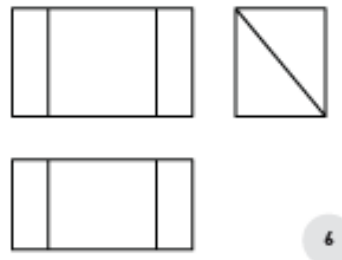
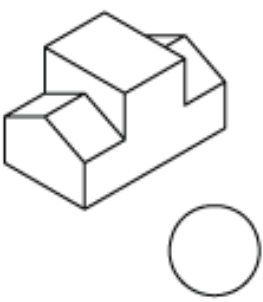
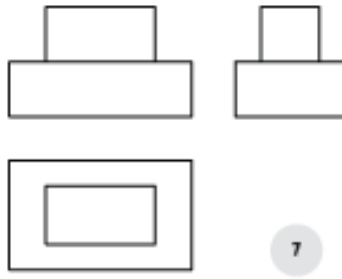
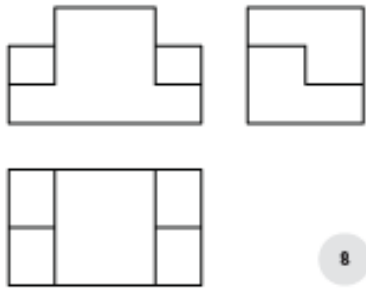


Para realizar estes exercícios deve procurar a apostila de Construções Geométricas.

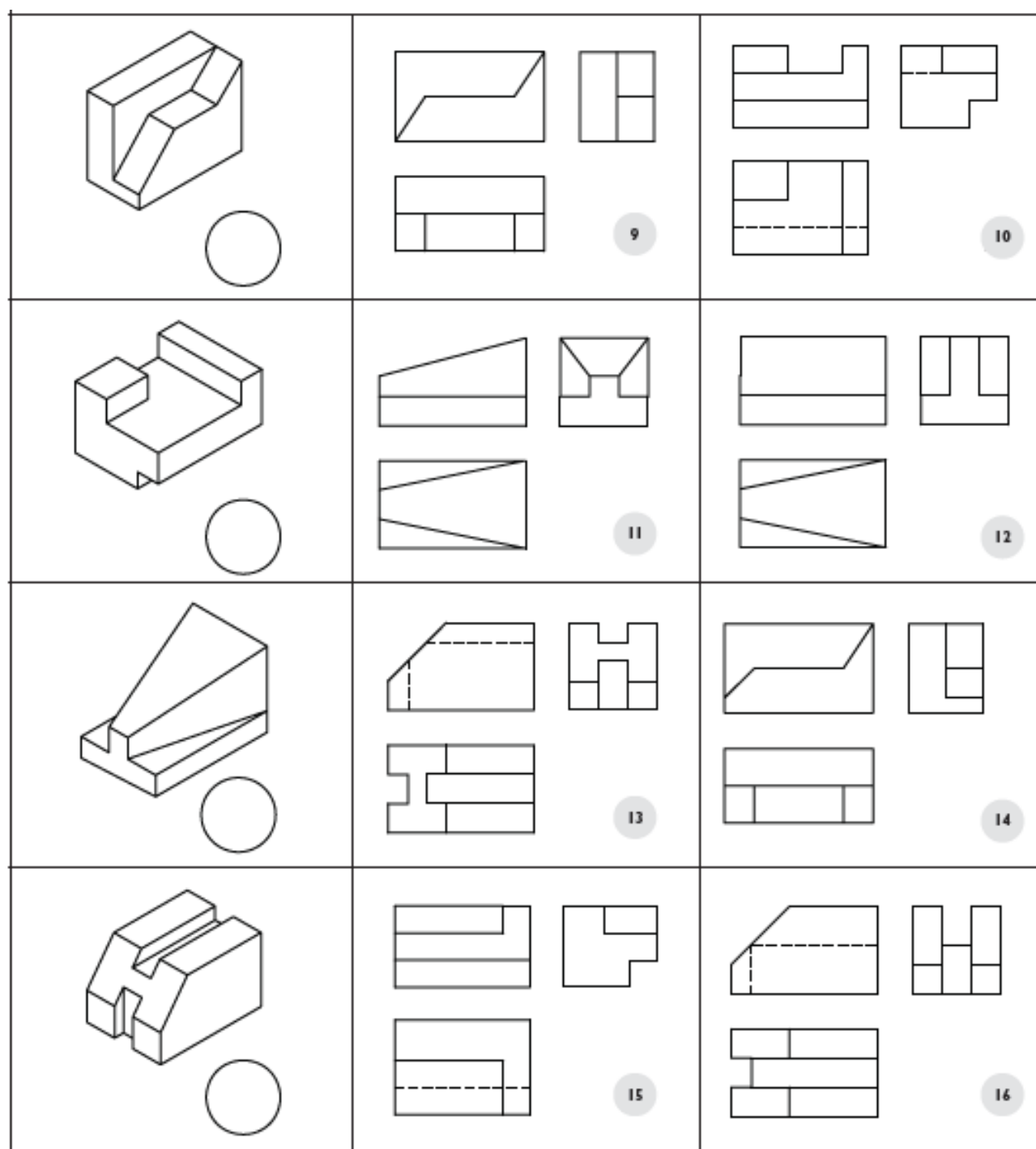
Introdução ao DIAC e Normas Técnicas

1. **Projeções Ortogonais:** Identifique e numere as projeções correspondentes a cada peça apresentada em perspectiva:.

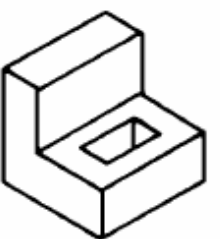
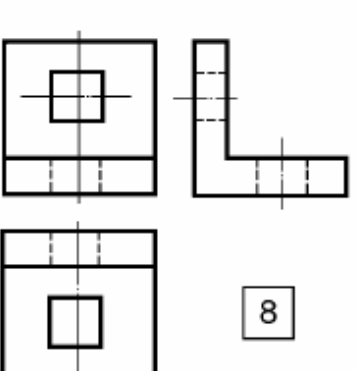
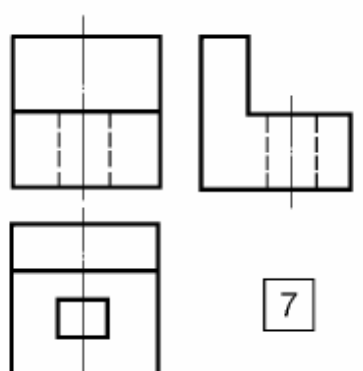
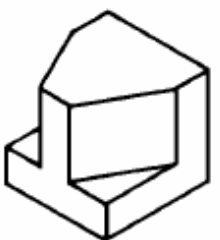
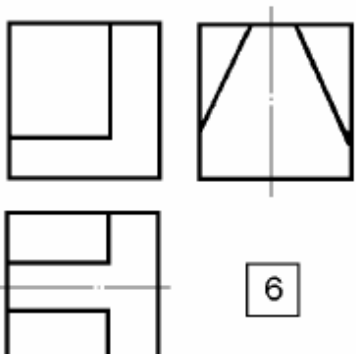
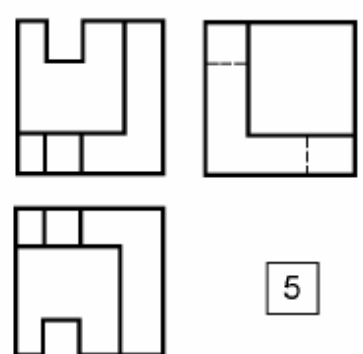
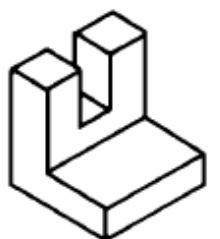
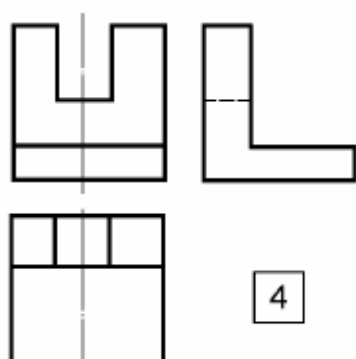
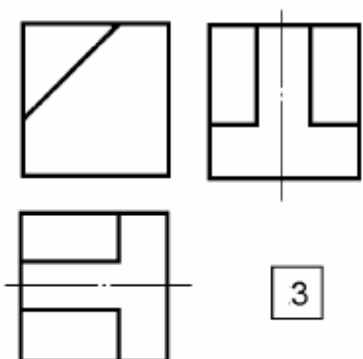
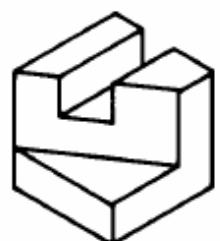
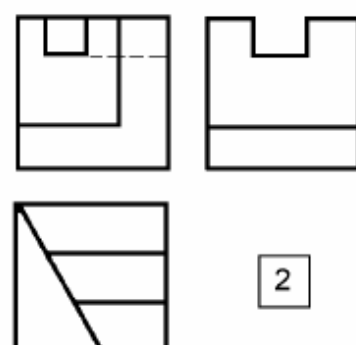
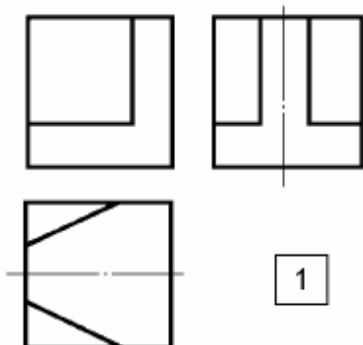
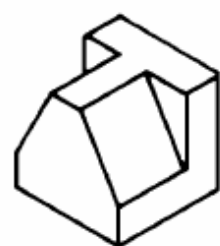
a)

	 <div style="text-align: right;">1</div>	 <div style="text-align: right;">2</div>
	 <div style="text-align: right;">3</div>	 <div style="text-align: right;">4</div>
	 <div style="text-align: right;">5</div>	 <div style="text-align: right;">6</div>
	 <div style="text-align: right;">7</div>	 <div style="text-align: right;">8</div>

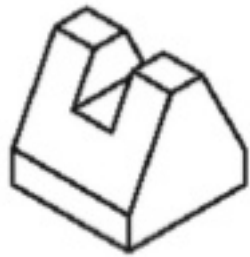
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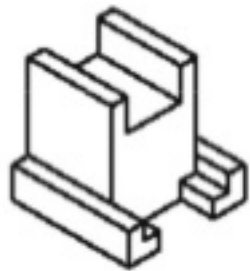
c)



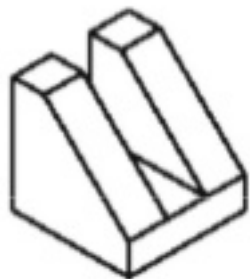
d)



07



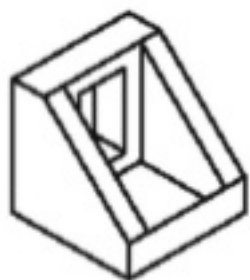
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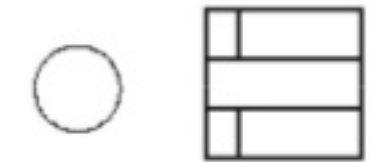
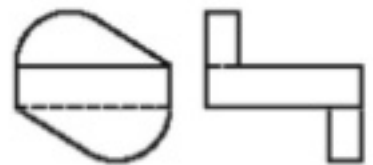
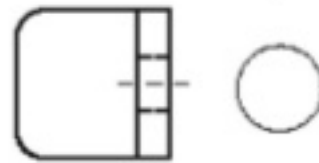
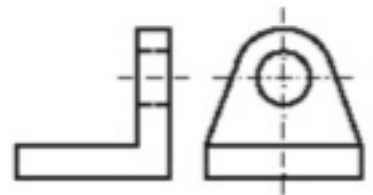
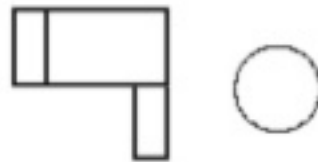
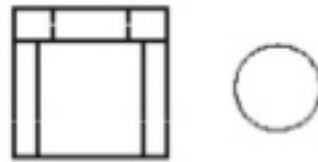
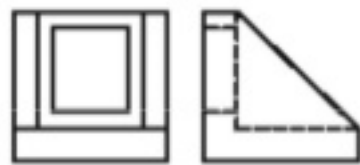
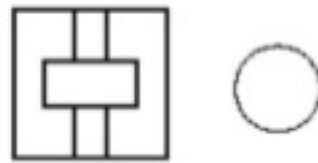
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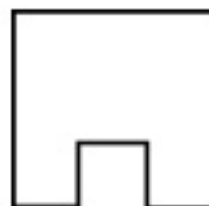
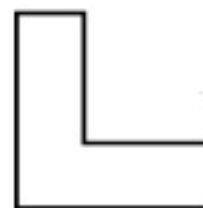
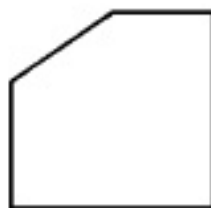
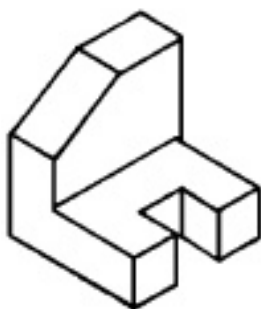
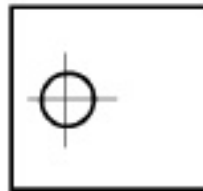
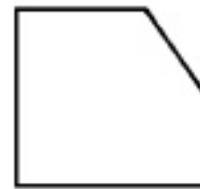
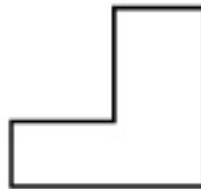
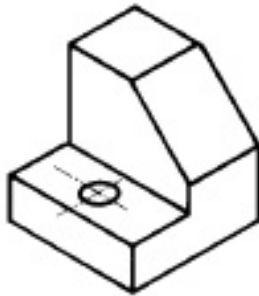
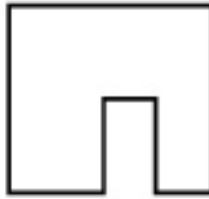
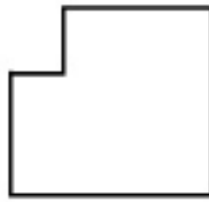
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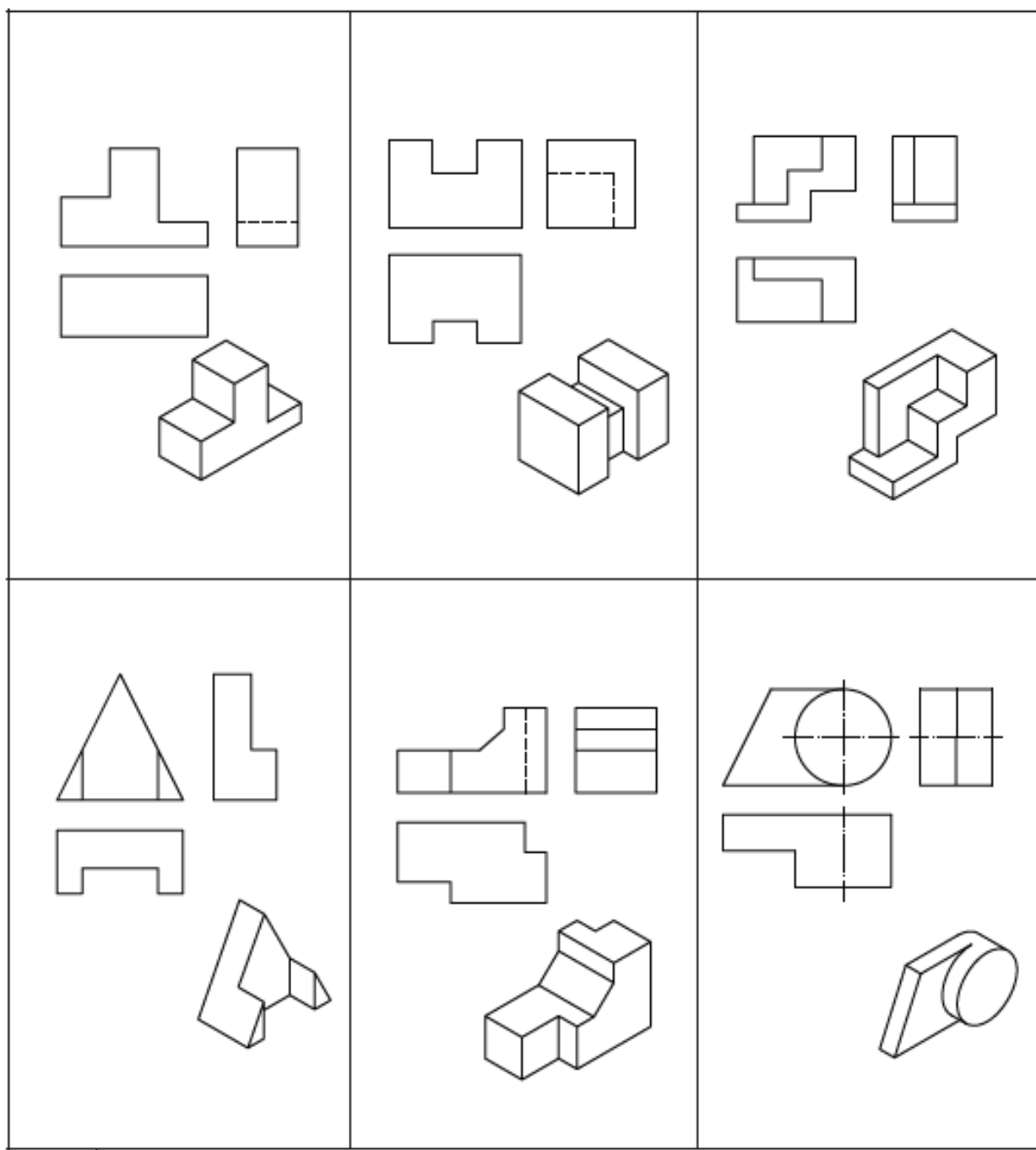


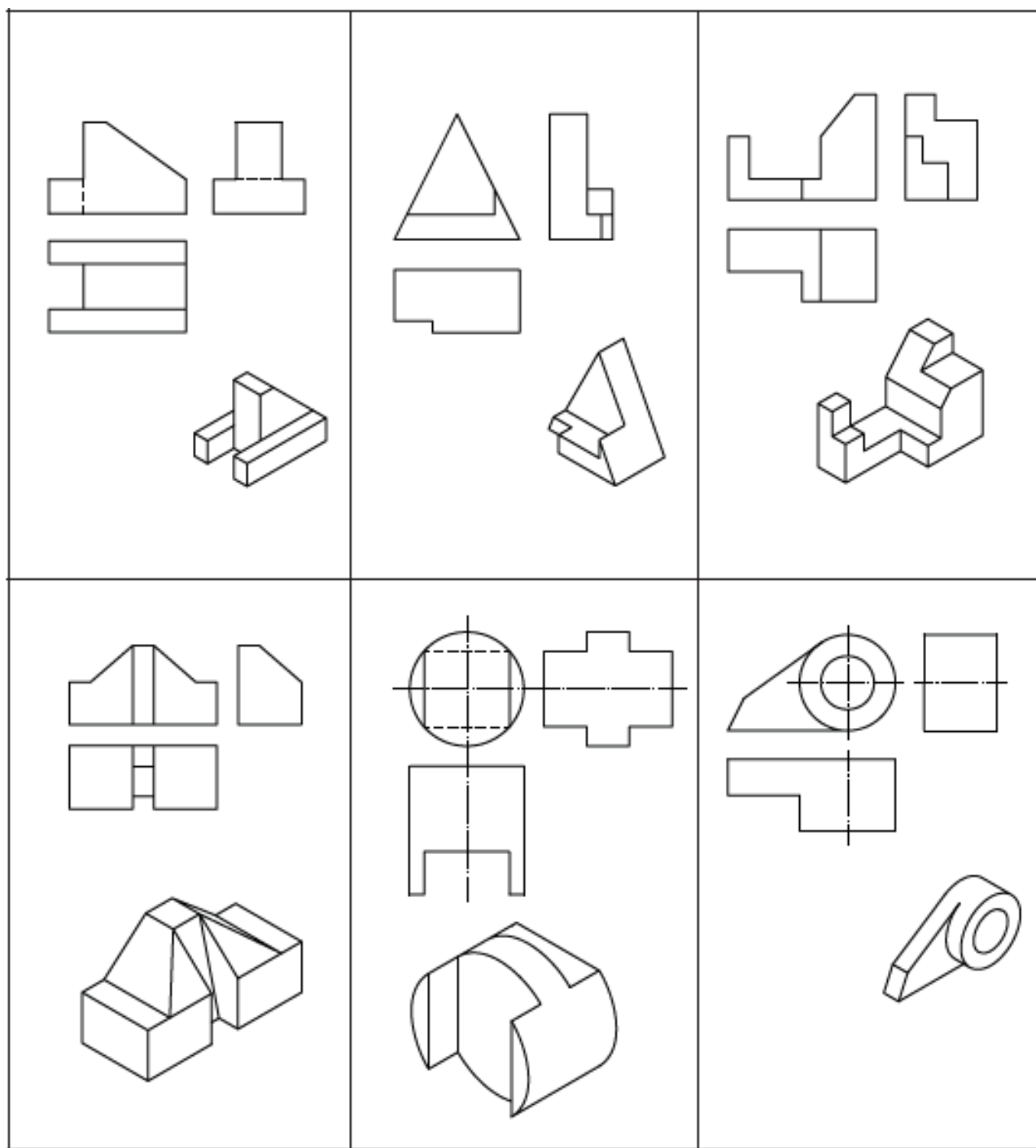
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2. **Projeções Ortogonais:** Dadas as perspectivas, analisar os desenho e colocar as linhas que faltam nas projeções ortogonais.







3. **Caligrafia Técnica:** Seguindo os exemplos, reproduza as letras.

TIPO INCLINADO:

abcdefghijklmnopqrstuvwxyz 1234567890
ABCDEFGHIJKLMNOPQRSTUVWXYZ

TIPO VERTICAL:

abcdefghijklmnopqrstuvwxyz 1234567890
ABCDEFGHIJKLMNOPQRSTUVWXYZ

Blank handwriting practice lines for the slanted type.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

a b c d e f g h i j k l m n o p q r s t u v w x y z

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4. Trabalhando com Escalas:

- a) Uma janela que numa escala 1:25 mede 0,04 m de largura, que dimensão terá na realidade?
- b) Um terreno que mede 200 m e está representado no papel por 0,4 m, em que escala está representado?
- c) A distancia gráfica entre A e B é 8 cm e a distancia real é 84 km. Qual é a escala utilizada no mapa?
- d) Deseja-se representar um retângulo com as dimensões de 10m 15m na escala 1:150. Quais serão as dimensões gráficas?
- e) A distância gráfica entre duas cidades A e B é 6cm e a distância real é de 15 km, qual é a escala utilizada no mapa?
- f) Desenhe com instrumentos no espaço que segue: um retângulo que tem como dimensões reais 1m x 50cm, um círculo com diâmetro de 10 cm e um triangulo equilátero com aresta igual a 20 cm. Escreva no espaço a escala usada para cada um

Retângulo:	Escala:
Circulo	Escala:
Triangulo	Escala

5. Normas Técnicas (linhas): Continue o traçado seguindo o exemplo.

[illegible]

6. **Posições da reta no sistema de Monge (desenho a mão livre):** Em folhas milimetradas projete as arestas das perspectivas abaixo formando as projeções frontal, superior e lateral direita, identifique as posições das arestas no espaço. Leve em consideração a proporção do desenho.

Figura 1

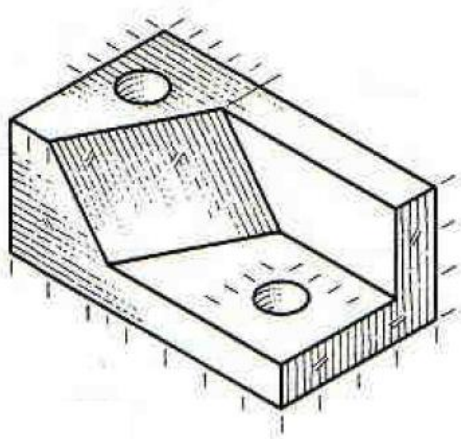


Figura 2

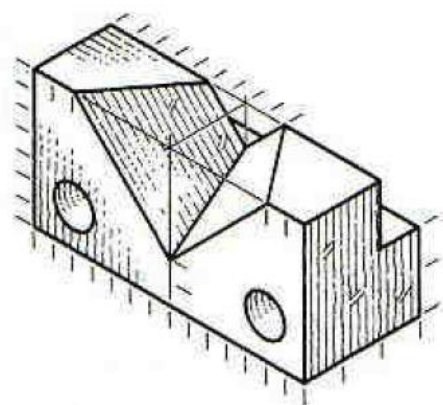


Figura 3

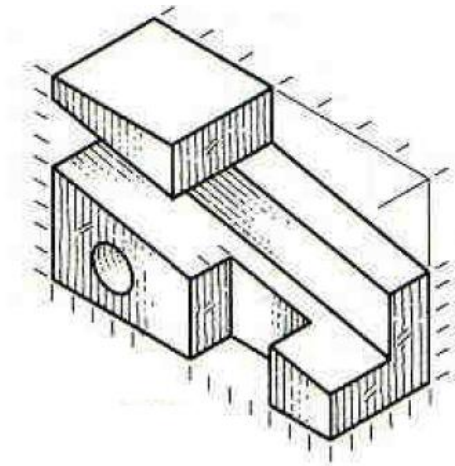


Figura 4

