



**INSTITUTO FEDERAL
SANTA CATARINA**

Desenho 1

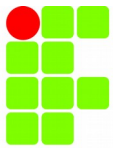
PARTE 5 Geometria plana

**Luiz Lemos
2016**



INSTITUTO FEDERAL
SANTA CATARINA

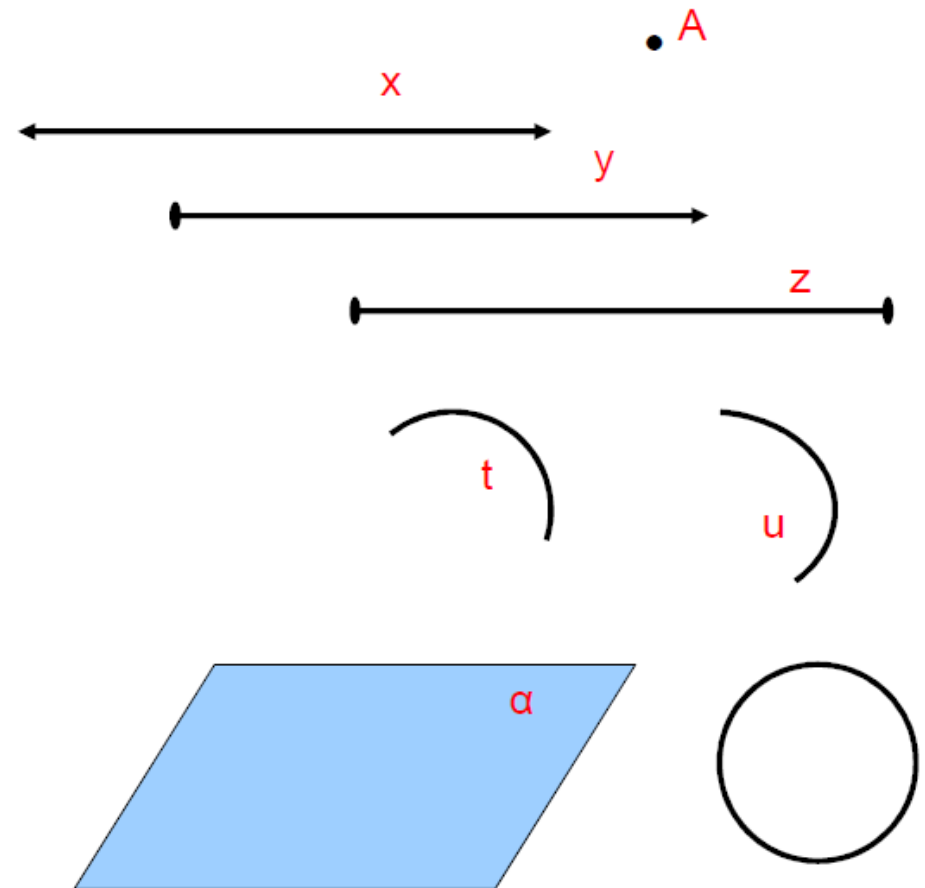
“E disse ao homem:
Eis que o temor do Senhor é a sabedoria, e
apartar-se do mal é a inteligência.”
Jó 28:28

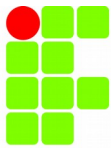


Geometria

Geometria plana

- Ponto
- Reta
- Semirreta
- Segmento de reta
- Arco
- Curva
- Circunferência
- Plano





Geometria

Geometria plana

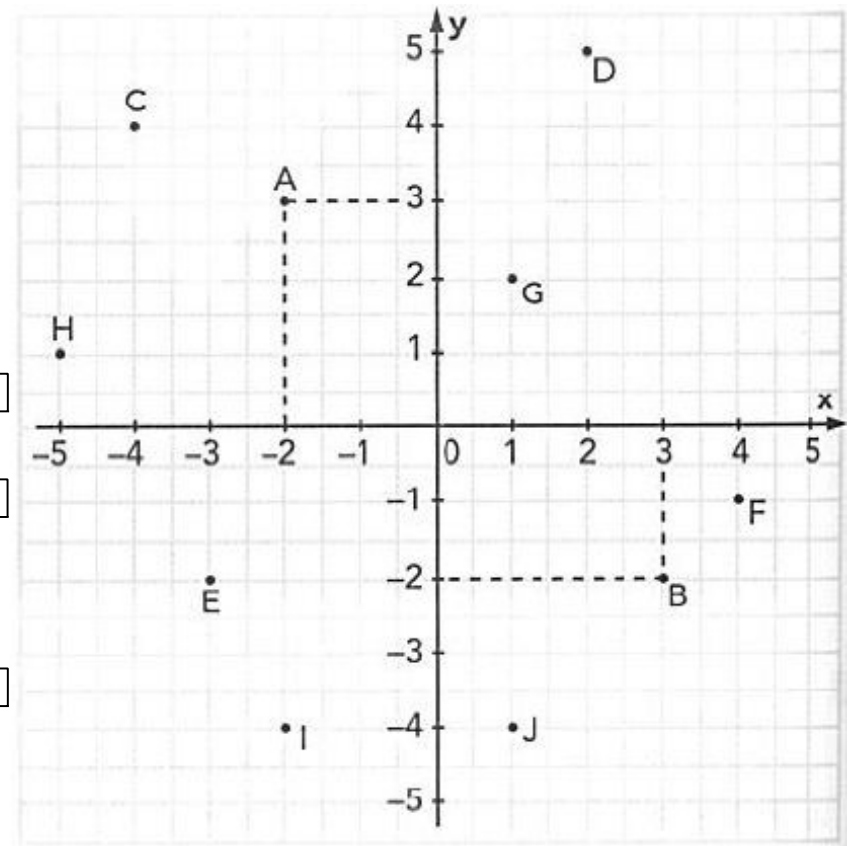
LOCALIZAÇÃO

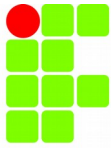
O ponto **A** na figura ao lado é determinado pelo par ordenado $(-2, 3)$, nessa ordem. Já o ponto **B** é determinado pelo par ordenado $(3, -2)$.

a) Indique os pares ordenados que determinam os pontos **C, D, E, F, G, H, I** e **J**.

b) O ponto correspondente ao par ordenado $(-2, 1)$ está mais próximo de **A** ou de **H**?

c) Entre os pares ordenados $(4, 0)$, $(0, 4)$, $(0, 0)$, $(-3, 0)$ e $(0, -3)$, quais têm o ponto correspondente sobre o eixo **x**?

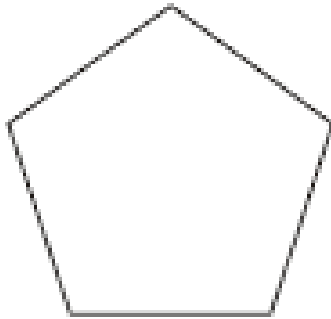




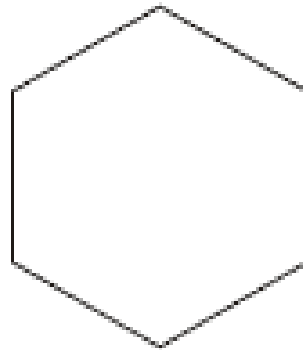
Geometria

Figuras planas

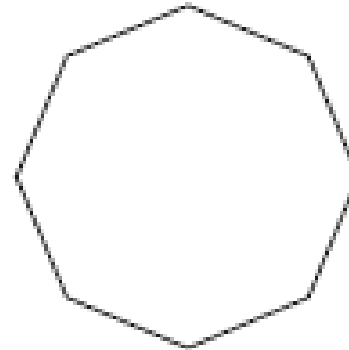
Polígonos Regulares



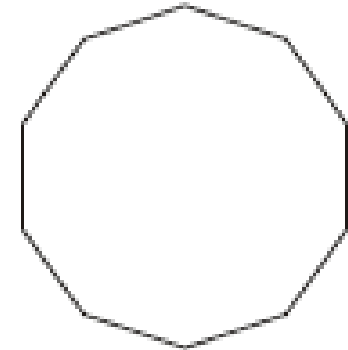
Pentágono



Hexágono



Octógono



Decágono

7 lados: Heptágono

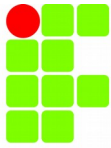
9 lados: Eneágono

11 lados: Undecágono

12 lados: Dodecágono

15 lados: Pentadecágono

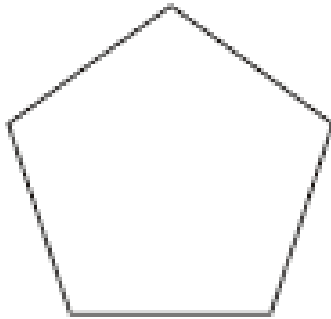
20 lados: Icoságono



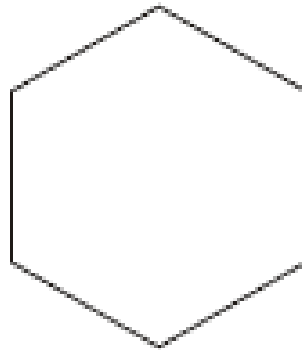
Geometria

Figuras planas

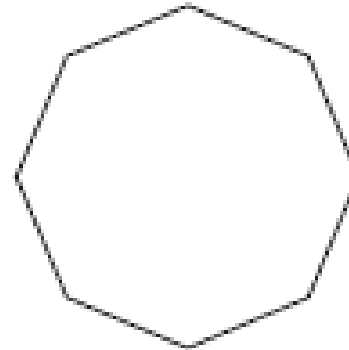
Polígonos Regulares



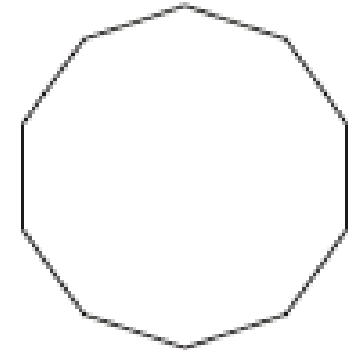
Pentágono



Hexágono



Octógono



Decágono

7 lados: Heptágono

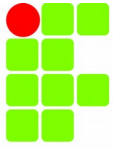
9 lados: Eneágono

11 lados: Undecágono

12 lados: Dodecágono

15 lados: Pentadecágono

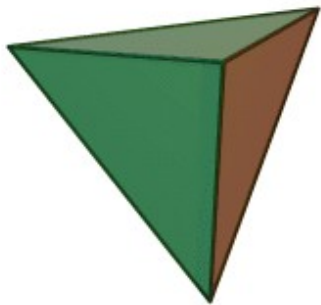
20 lados: Icoságono



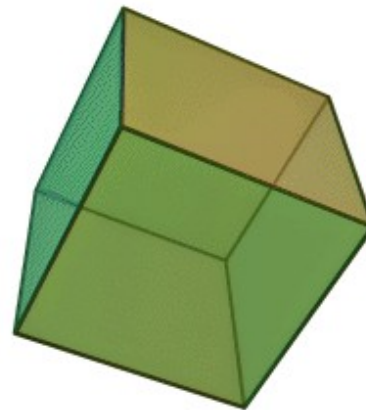
Geometria

Figuras sólidas

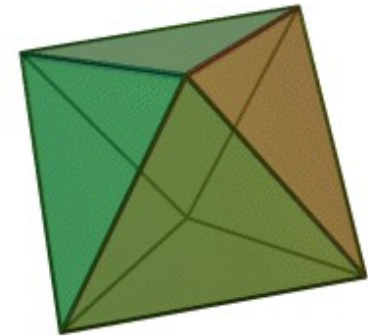
▪ Tetraedro

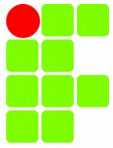


▪ Hexaedro



▪ Octaedro

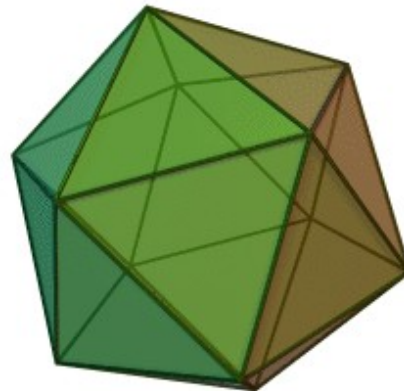
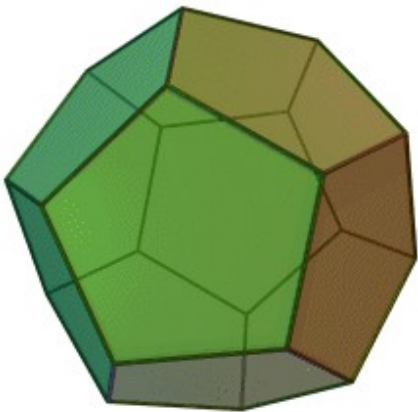


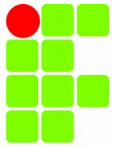


Geometria

Figuras sólidas

- Dodecaedro
- Icosaedro
- Esfera



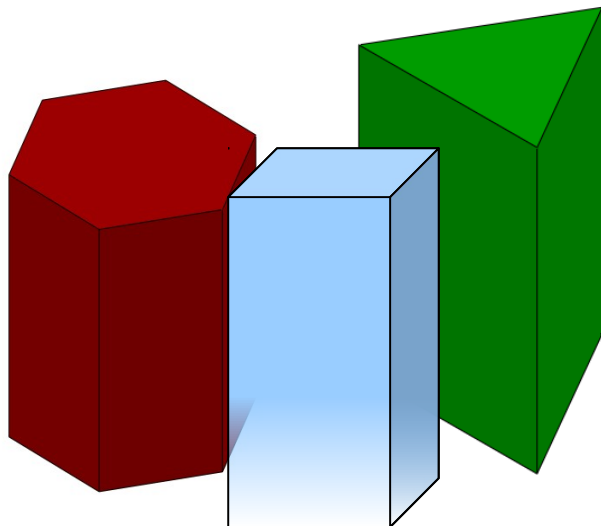


Geometria

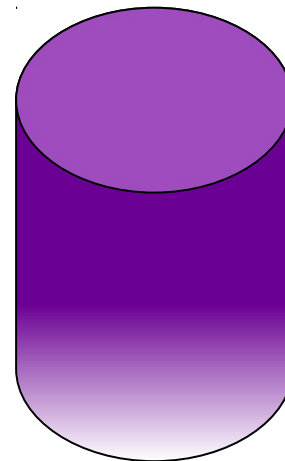
Figuras sólidas

- Prismas

- Base triangular
- Base quadrada...

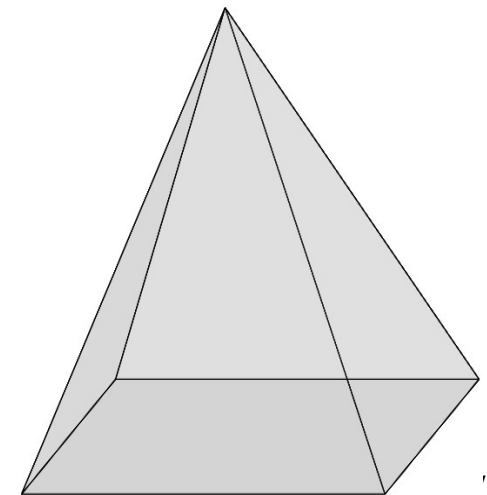


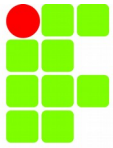
- Cilindro



- Pirâmide

- Base triangular
- Base quadrada...

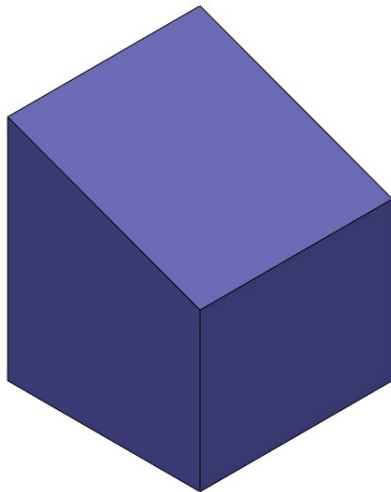




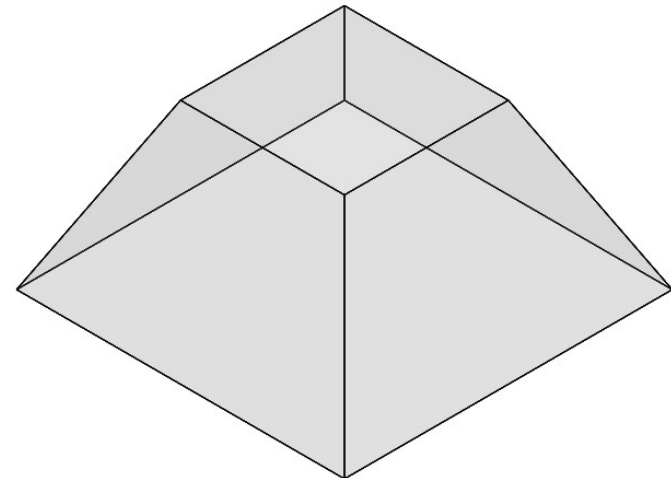
Geometria

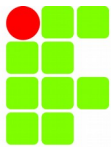
Figuras sólidas

- Tronco de prisma
 - Base triangular
 - Base quadrada...



- Tronco de pirâmide
 - Base triangular
 - Base quadrada...

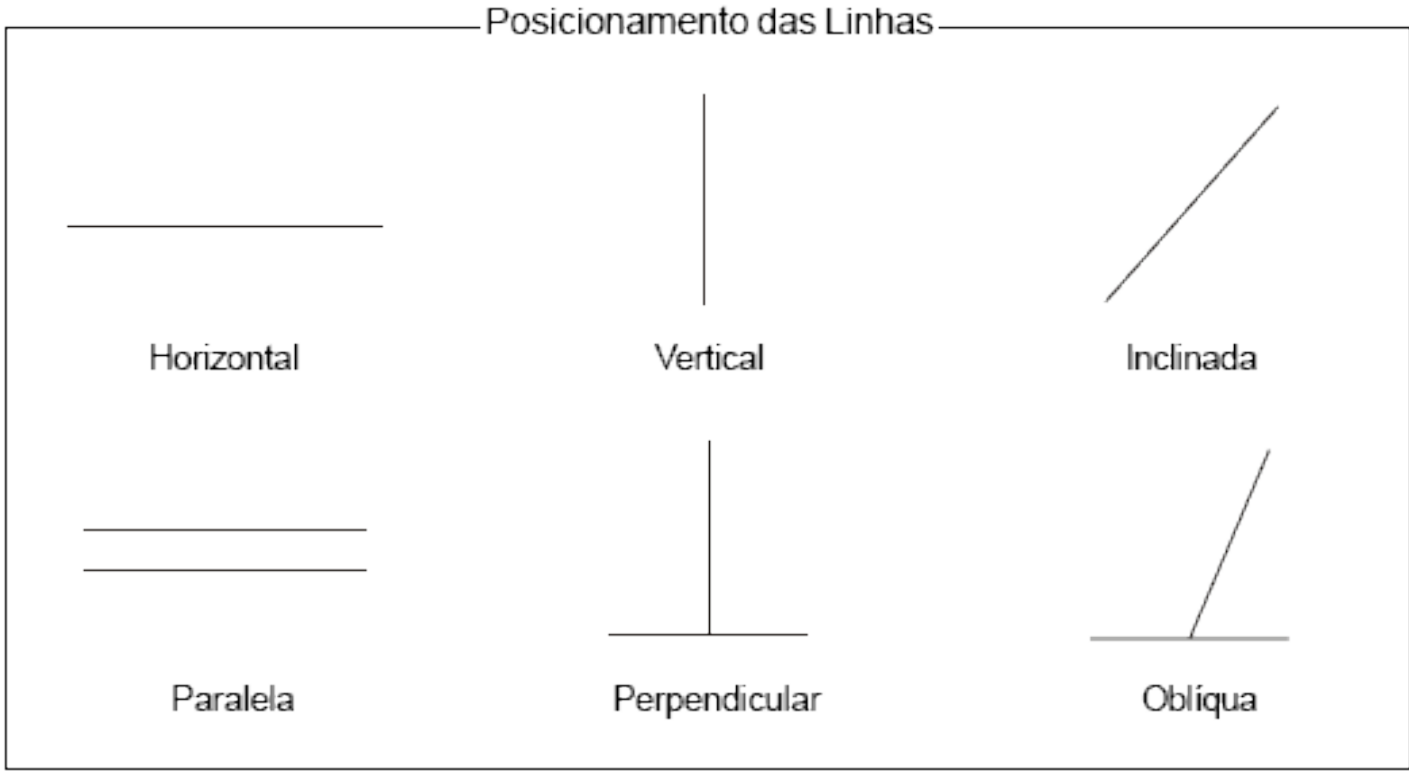
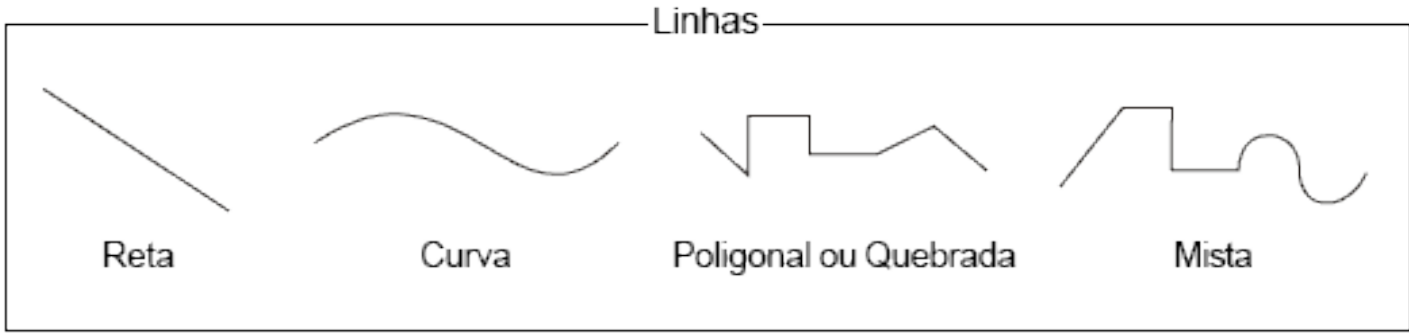


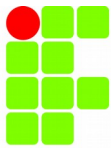


Geometria

Construções geométricas

Relações geométricas

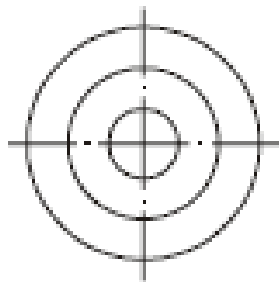




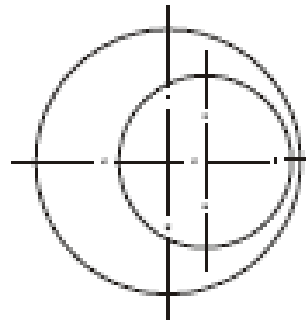
Geometria

Construções geométricas

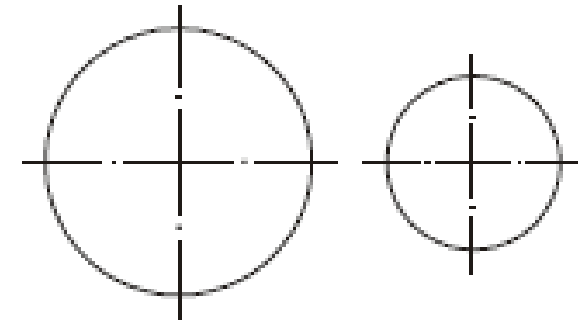
Posições Relativas da Circuferência



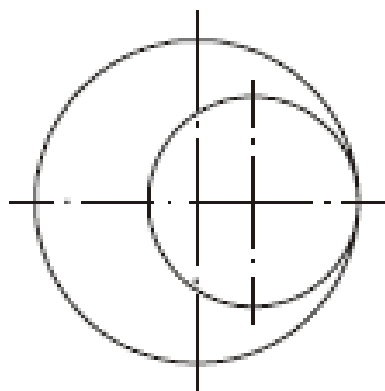
Concêntricas



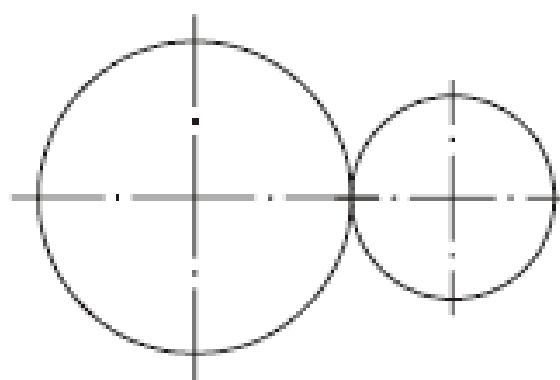
Interiores Excêntricas



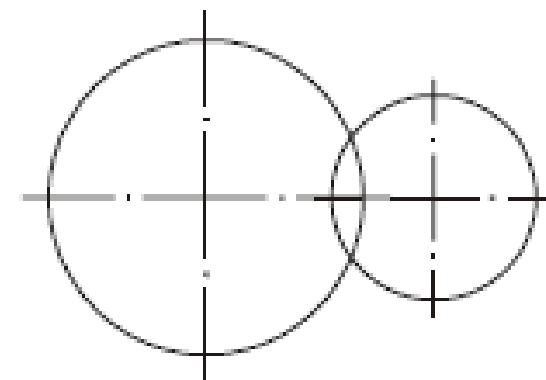
Exteriores



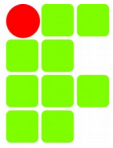
Tangentes Interiores



Tangentes Exteriores

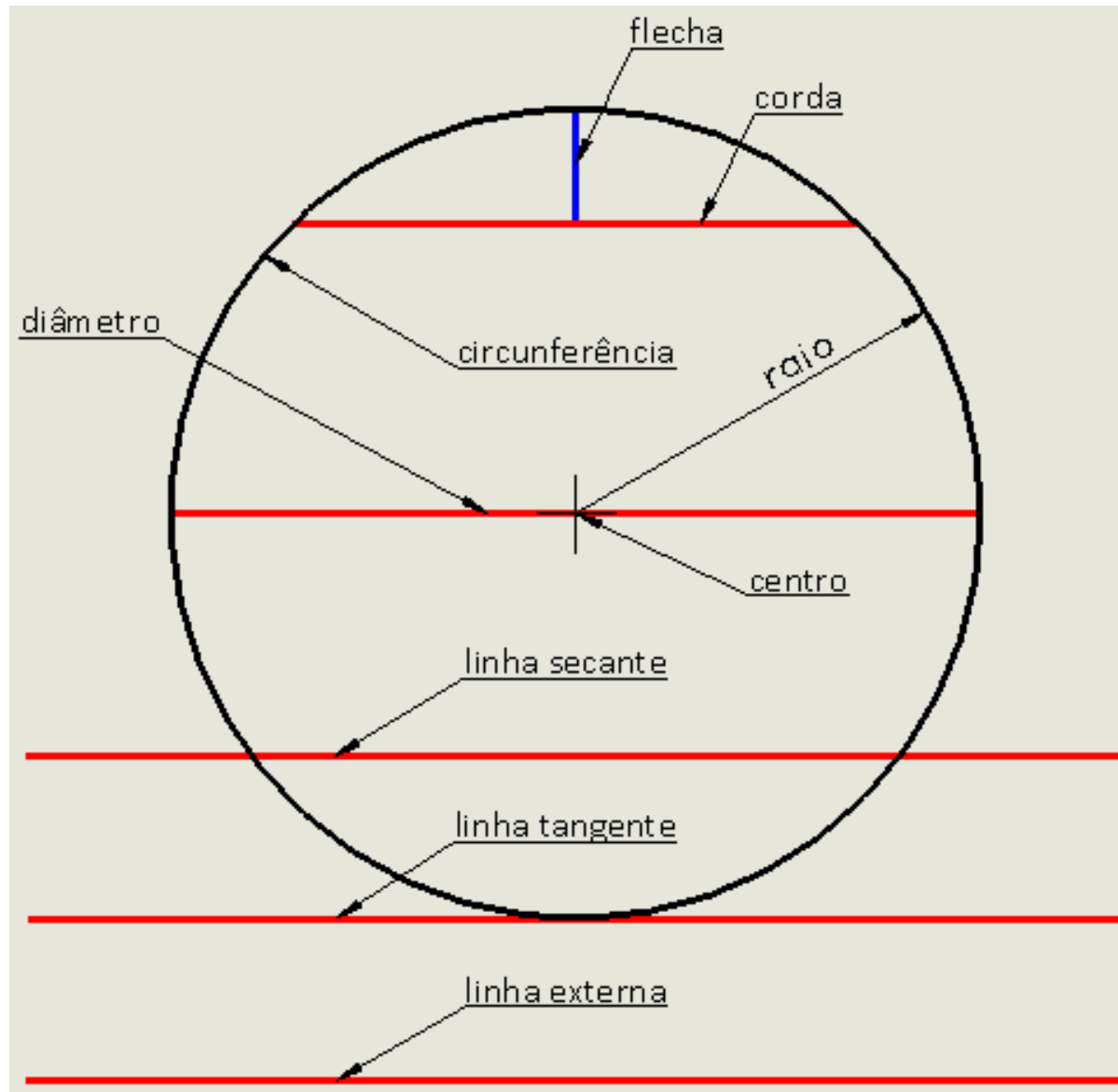


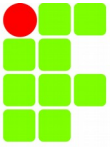
Secantes



Geometria

Construções geométricas

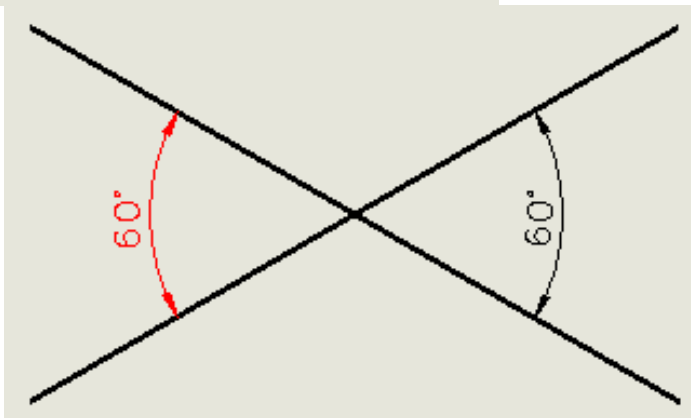
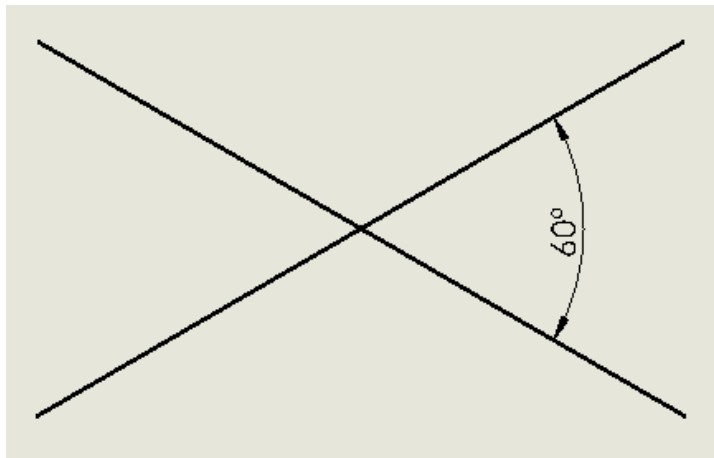




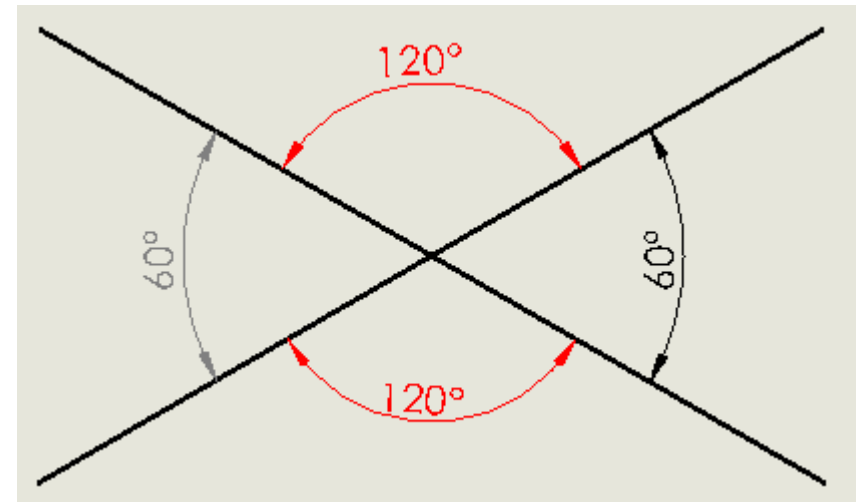
Geometria

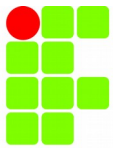
Construções geométricas

- Ângulos opostos pelo vértice são iguais



- Somatória de todos os ângulos de mesmo vértice: 360°



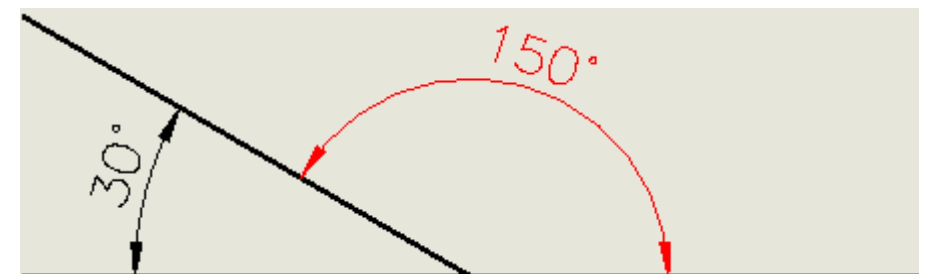
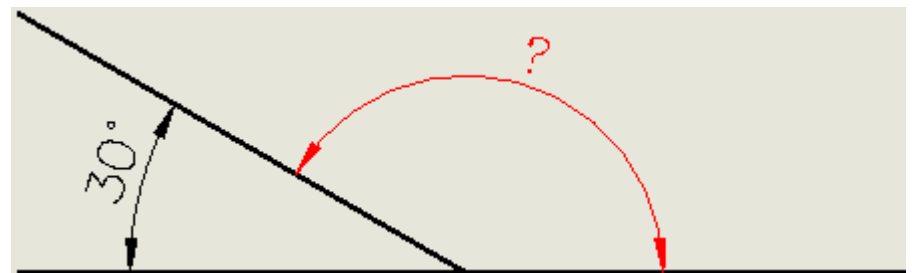
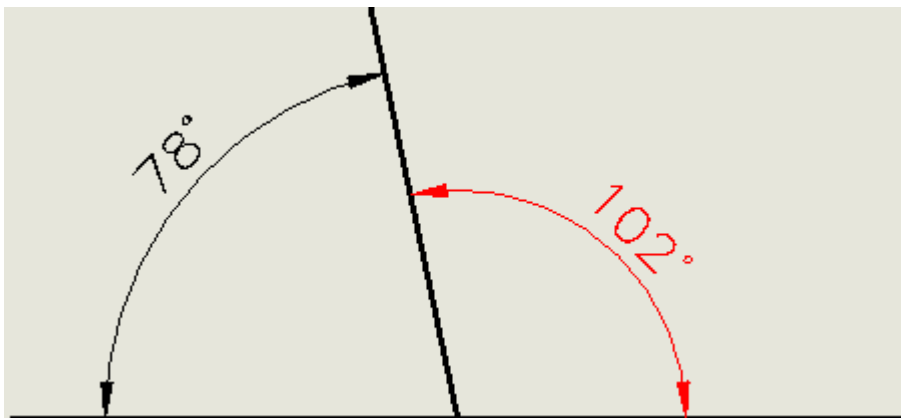
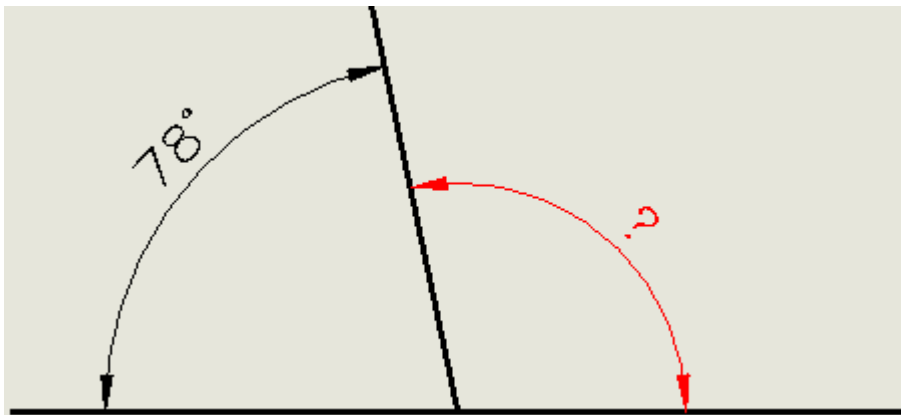


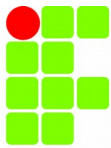
Geometria

Construções geométricas

Exercícios:

- Somatória de todos os ângulos em vértice sobre uma reta: 180°

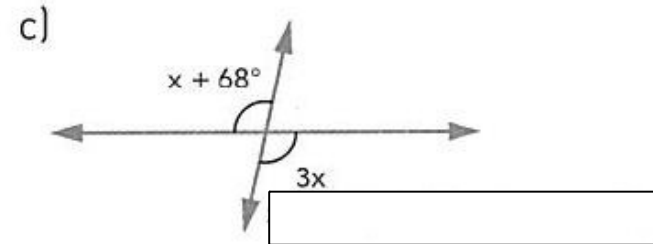
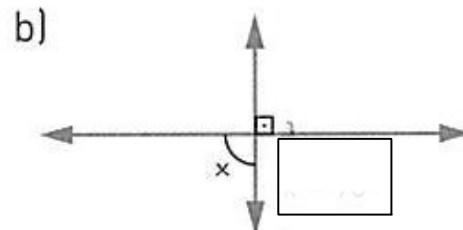
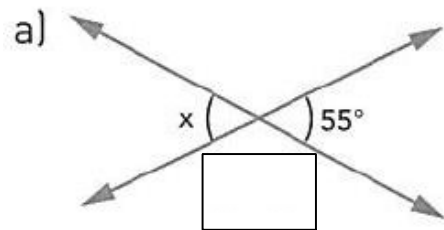




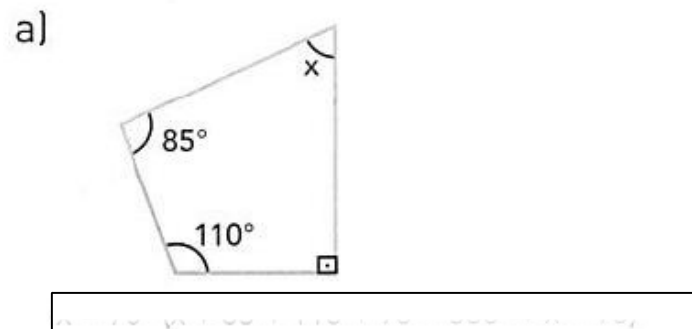
Geometria

Construções geométricas

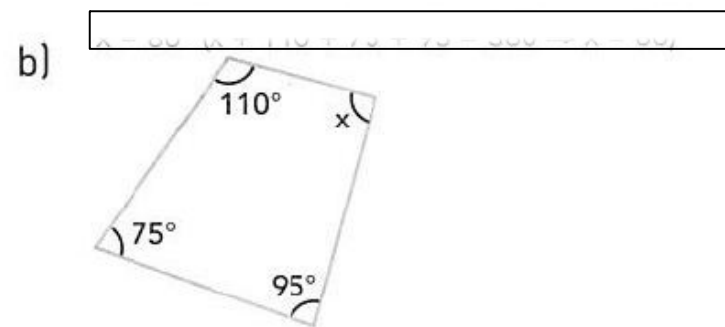
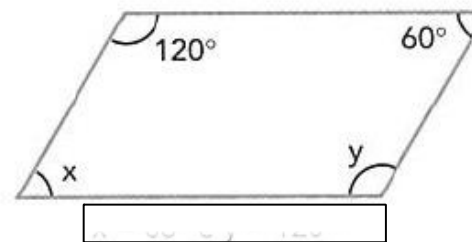
Em cada item, descubra o valor de x , em graus, sem efetuar medidas.



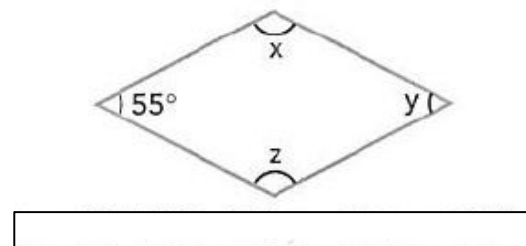
Sem usar transferidor, determine as medidas, em graus, dos ângulos indicados com letras nos seguintes quadriláteros:

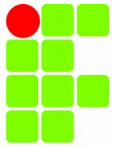


c) Paralelogramo



d) Losango



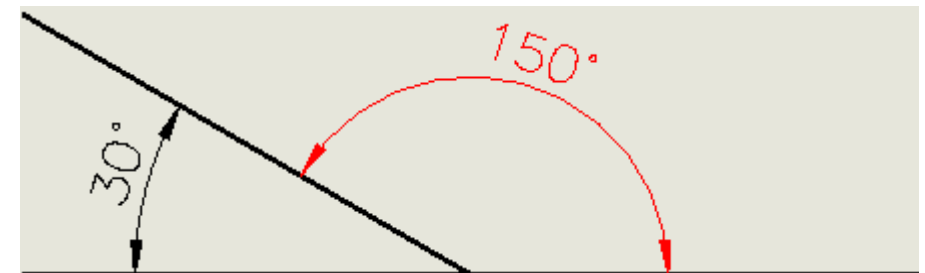
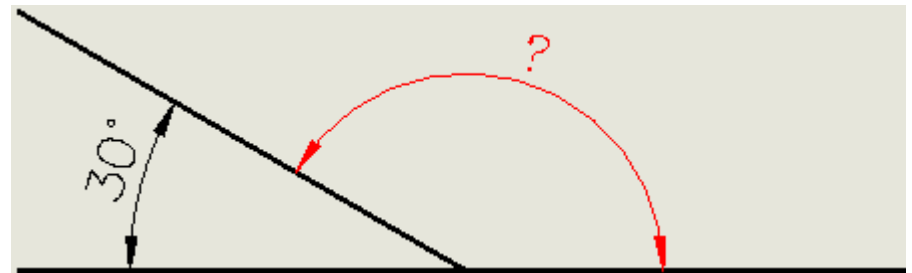
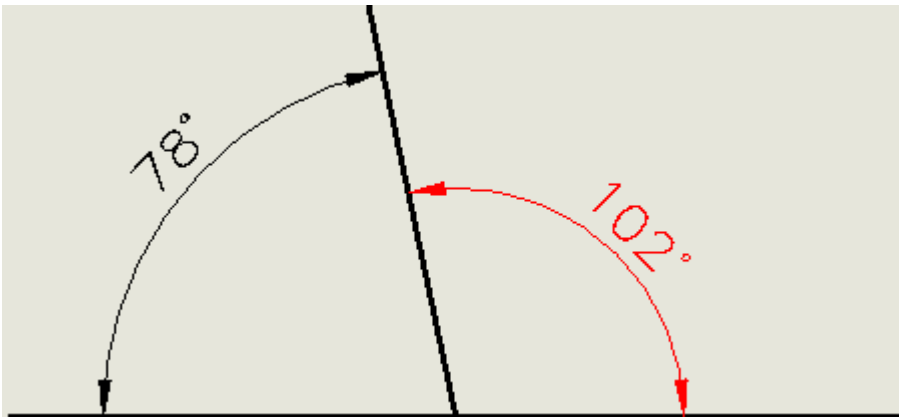
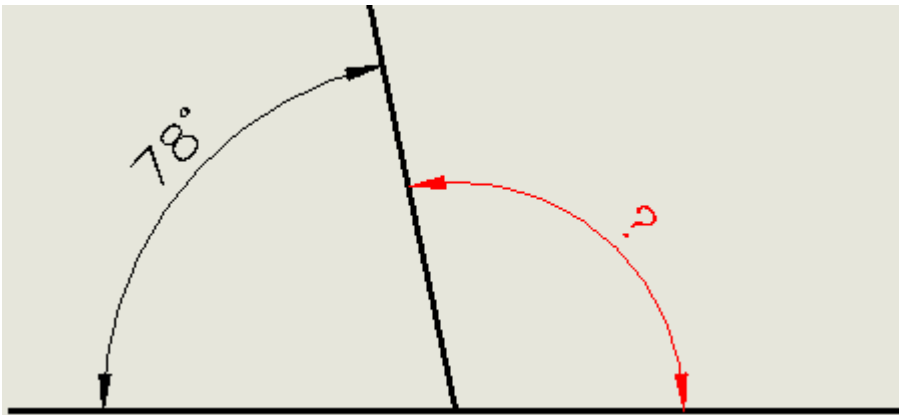


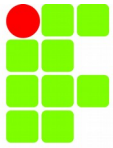
Geometria

Construções geométricas

Exercícios:

- Somatória de todos os ângulos em vértice sobre uma reta: 180°



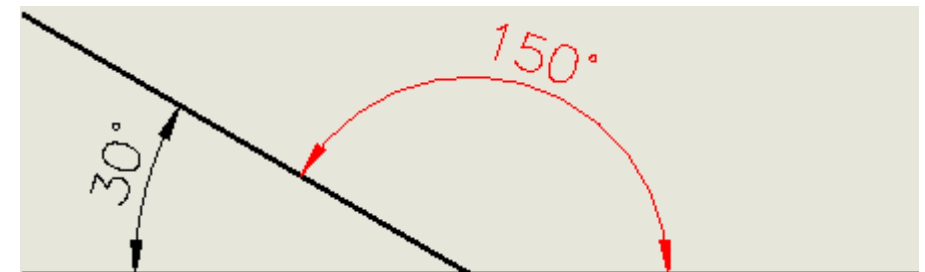
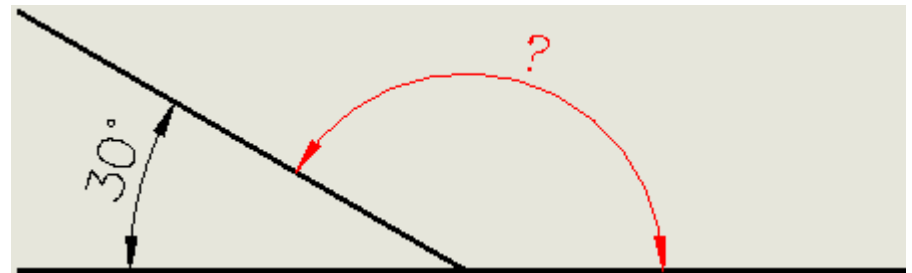
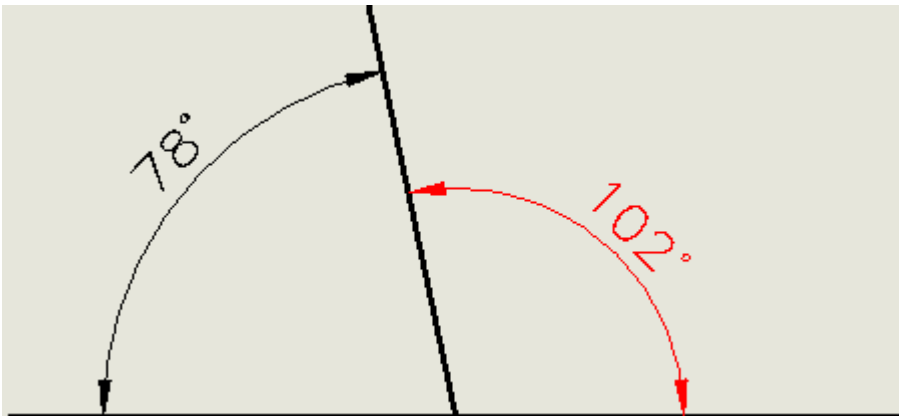
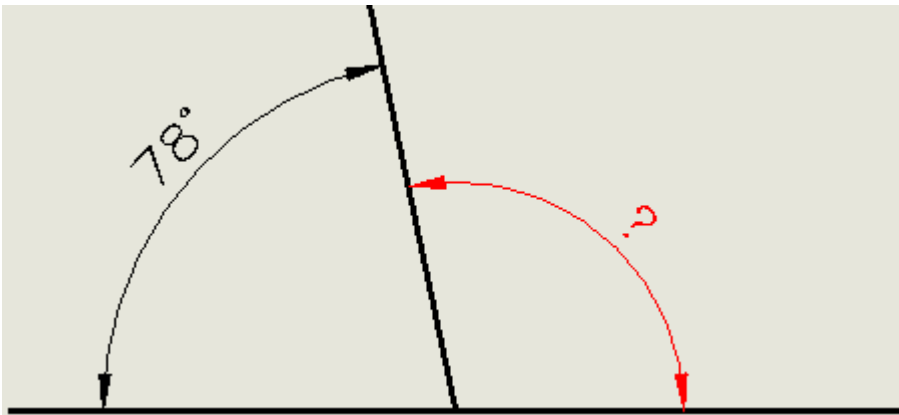


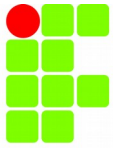
Geometria

Construções geométricas

Exercícios:

- Somatória de todos os ângulos em vértice sobre uma reta: 180°



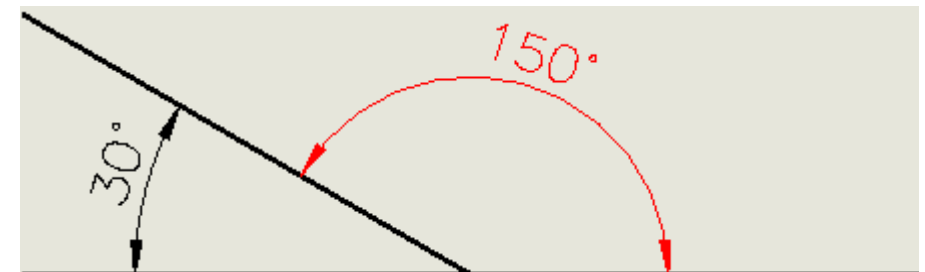
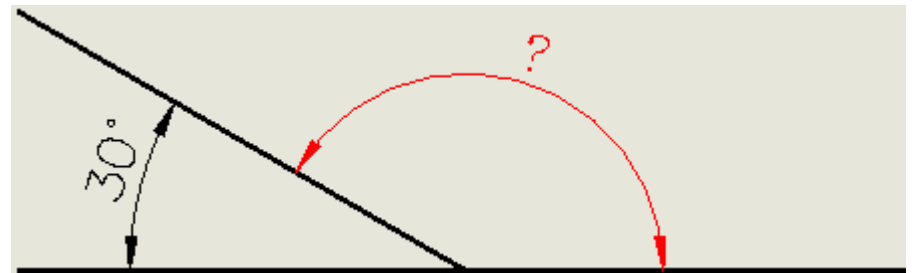
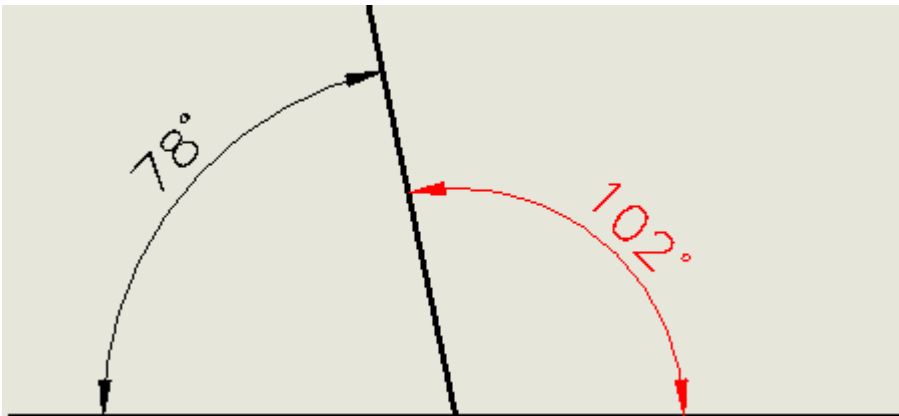
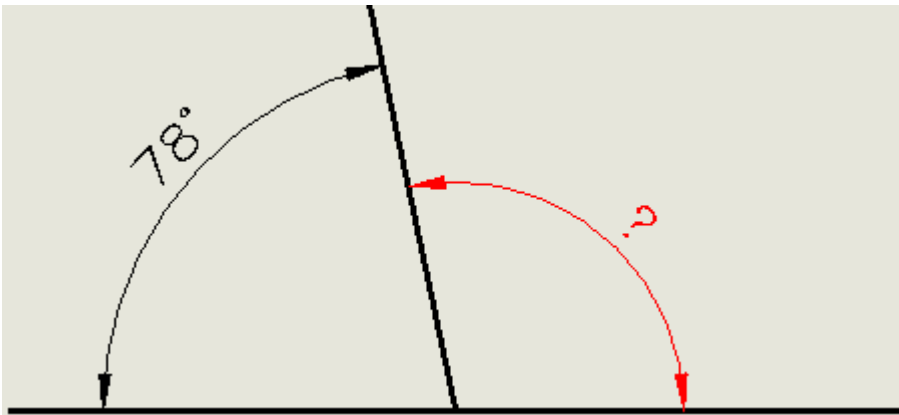


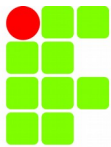
Geometria

Construções geométricas

Exercícios:

- Somatória de todos os ângulos em vértice sobre uma reta: 180°





Geometria

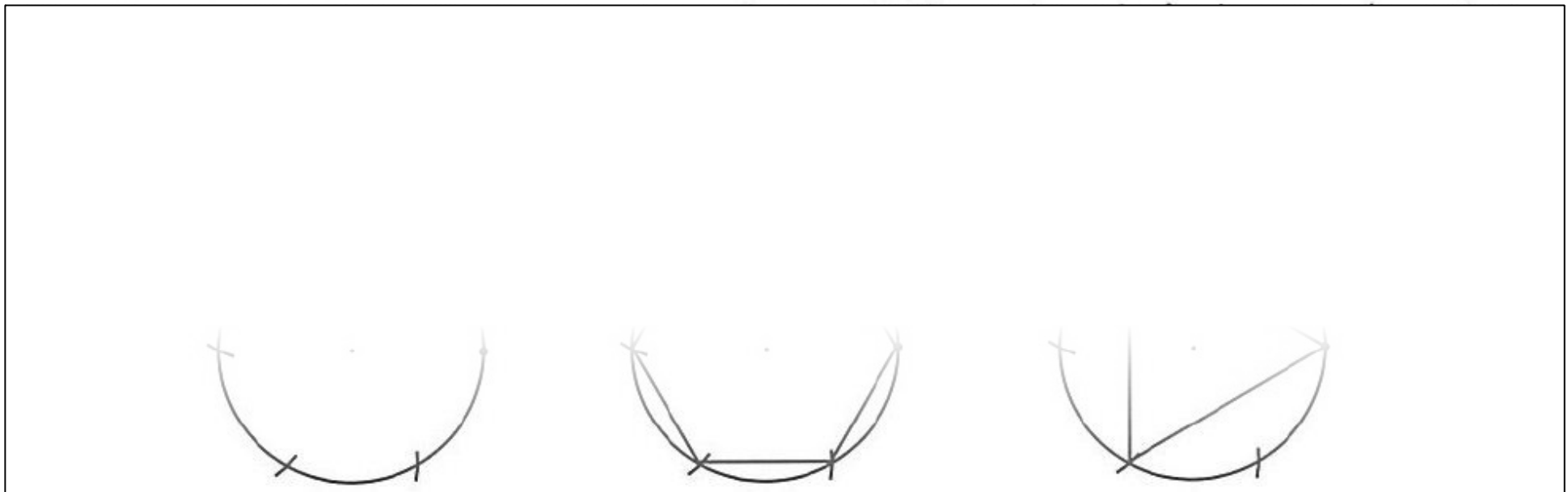
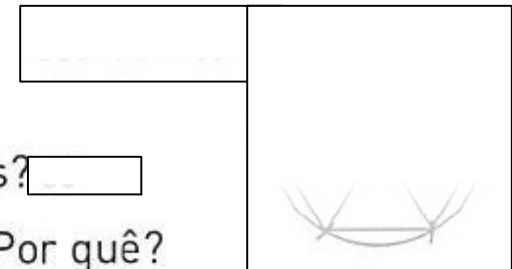
Geometria plana

Divida uma circunferência com raio de 3,5 cm em seis partes iguais usando transferidor. Trace o polígono regular correspondente e, em seguida, ligue o centro da circunferência aos vértices do polígono. Finalmente responda:

a) Quantos triângulos foram formados?

b) Qual é a medida dos ângulos internos de cada um desses triângulos?

c) Que nome damos a cada um desses triângulos quanto aos lados? Por quê?





Bibliografia

- ABNT. **NBR 8402**: Execução de caráter para escrita em desenho técnico. 1994.
- DANTE, Luiz Roberto. **Tudo é matemática**. 3ª edição. São Paulo: Ed. Ática, 2009 (Telecurso profissionalizante 2000).
- MOTTA, Reginaldo. **Desenho técnico mecânico**. Florianópolis: SENAI/SC, 2010.
- PROVENZA, F. **Desenhista de Máquinas**. São Paulo: F. Provenza, 1996.
- RIBEIRO, Antonio Clélio; PERES, Mauro Pedro; IZIDORO, Nacir. **Leitura e interpretação de desenho técnico**.
- SENAI-SP. **Leitura e interpretação de desenho técnico mecânico**. São Paulo: Ed. Globo, 2000 (Telecurso profissionalizante 2000).
- SENAI-SC. **Desenho técnico mecânico**. Florianópolis: 2004.
- SILVA, Arlindo... [et al.]. **Desenho técnico moderno**. Tradução da 4.ed. original portuguesa atualizada e aumentada. Rio de Janeiro: LTC, 2011.
- SPECK, Henderson; PEIXOTO, Virgílio Vieira. **Manual básico de desenho técnico**. 6ª. edição rev. Florianópolis: Ed. da UFSC, 2010.