

Representação Digital

2023-2024

U LISBOA

UNIVERSIDADE
DE LISBOA

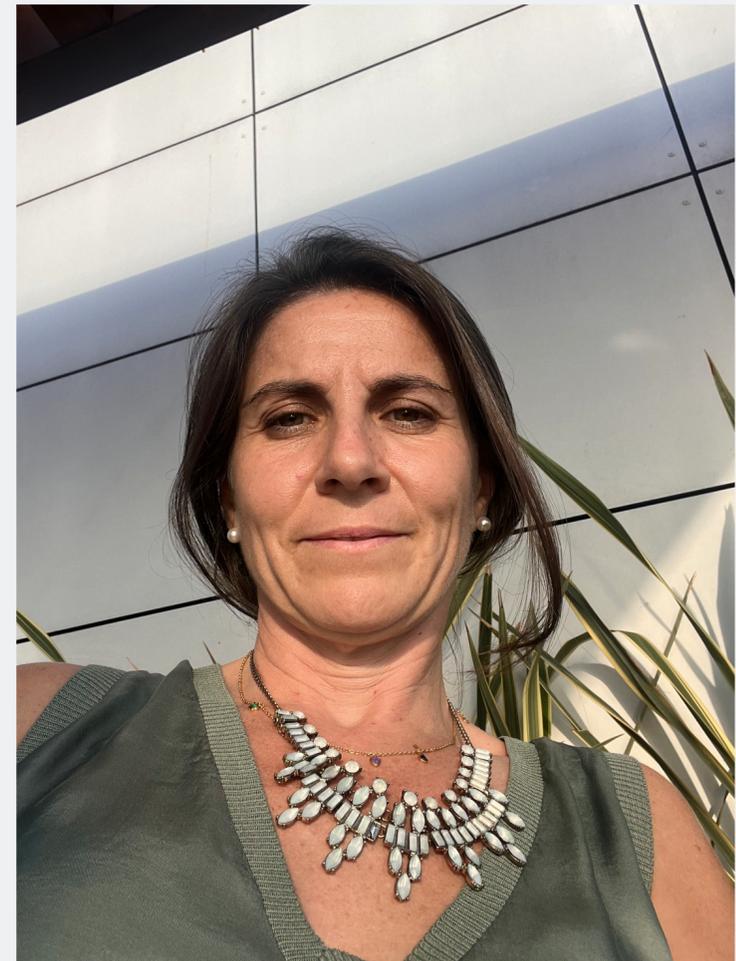


FACULDADE DE ARQUITETURA
UNIVERSIDADE DE LISBOA

Mestrado Integrado em Arquitectura
Ano Lectivo 2023-2024 1º Semestre
Docente - Nuno Alão 2º Ano

20221035

Ana Braga



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1ª semana	slide 4
2ª semana	slide 7
3ª semana	slide 13
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6ª semana	
7ª semana	
8ª semana	



1ª aula- apresentação

Regime de faltas - 60% presenças

Programas a utilizar na cadeira:

- **AutoCAD V.21**
- **3D studio Max V.21**

Autodesk Student: criar conta estudante

Filezilla – client e Brackets/notepad++/sublime (Editor de texto)

Exercício 1: representação de elementos sobre uma planta (decalque de uma imagem 2D)

servidor: ftp.fa.ulisboa.pt;

utilizador: numero de aluno;

pass: moodle

Prefixos que permitem aceder a diferentes conteúdos (home/www/ftp)

Pesquisar página: home.fa.ulisboa.pt/~numero de aluno

2ª aula

Caderno diário digital (imagem + descrição)

Page source (botão direito do rato)

2ª -> 2º

2ª -> 2ª

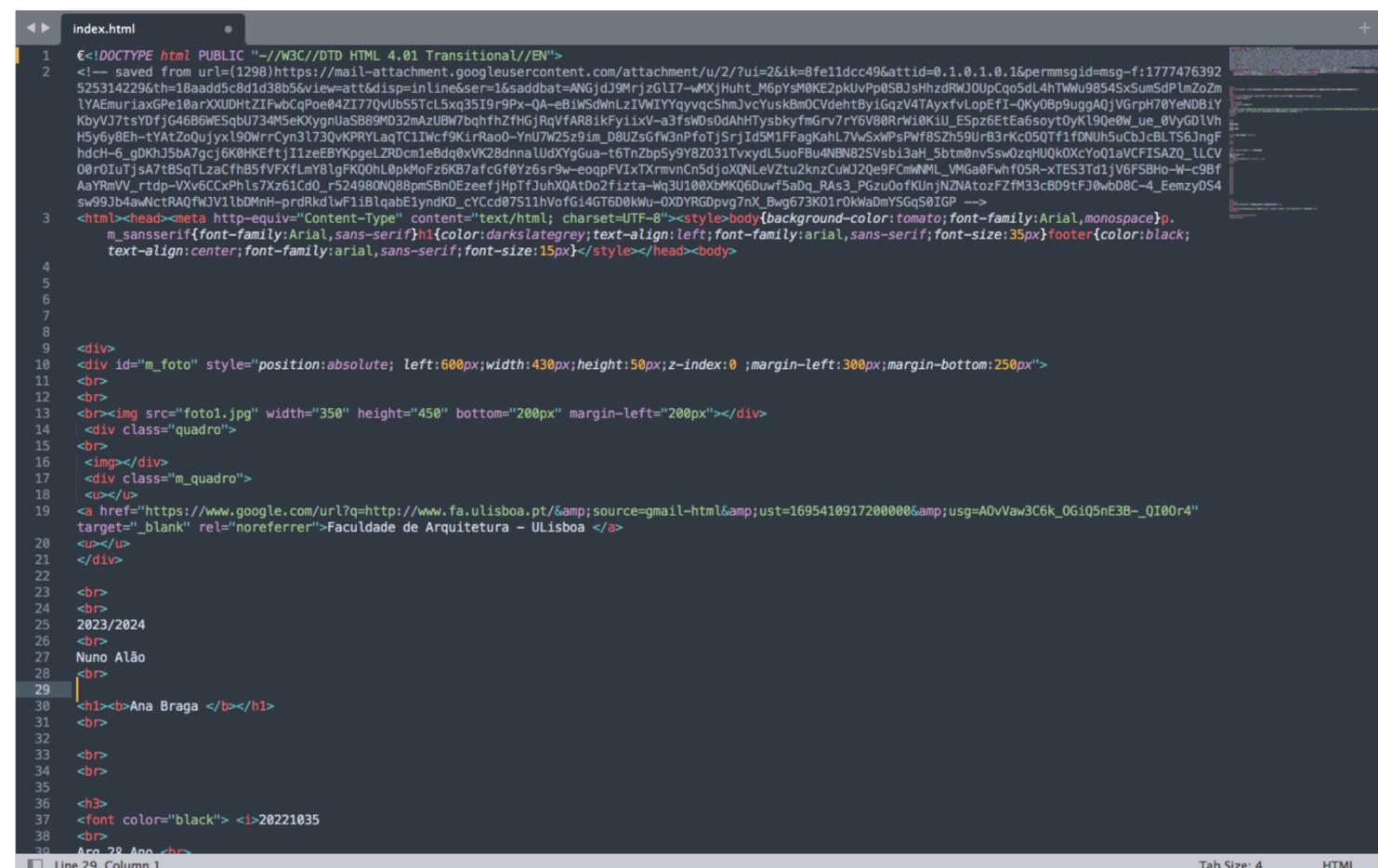
U´ ú

À à

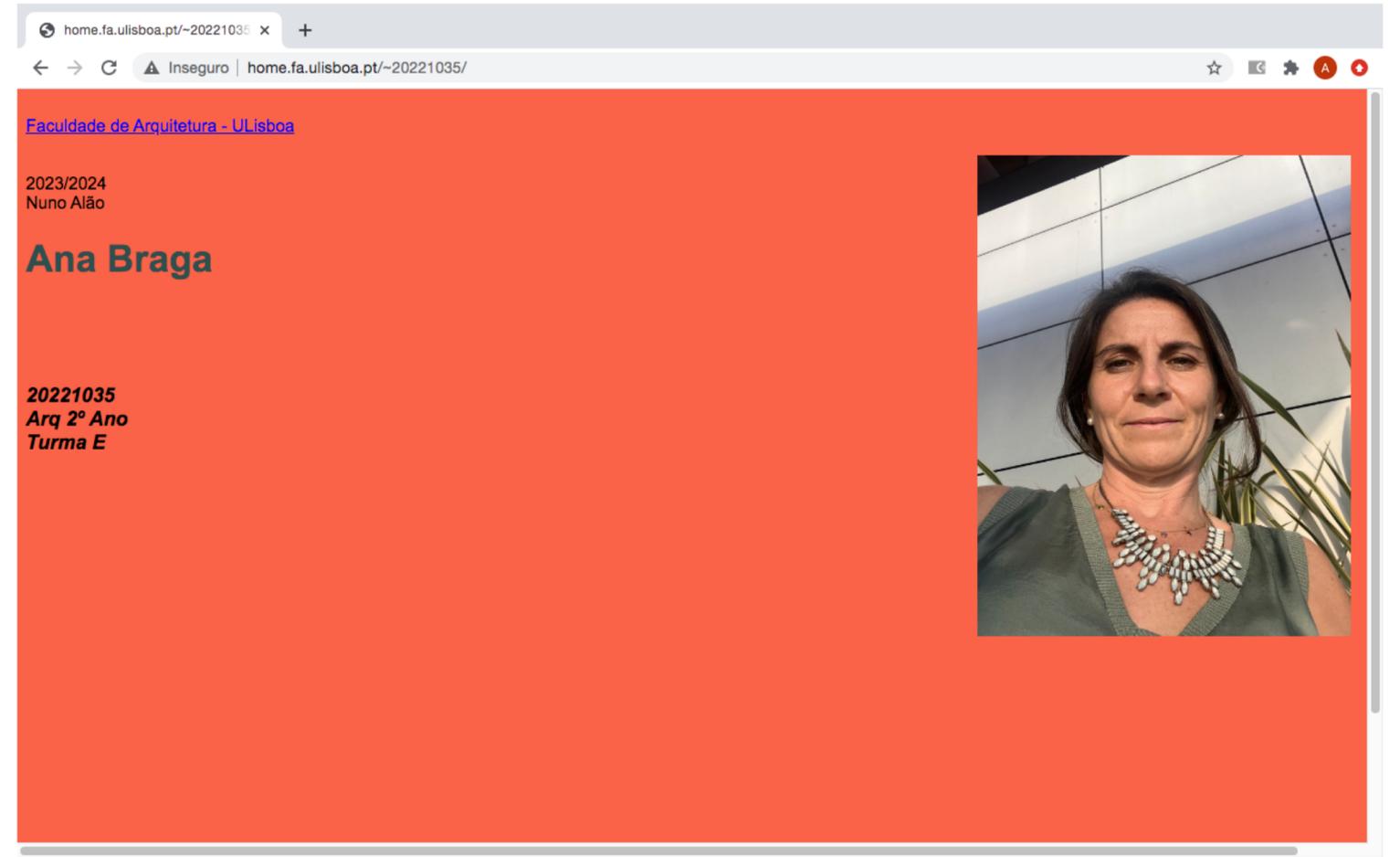
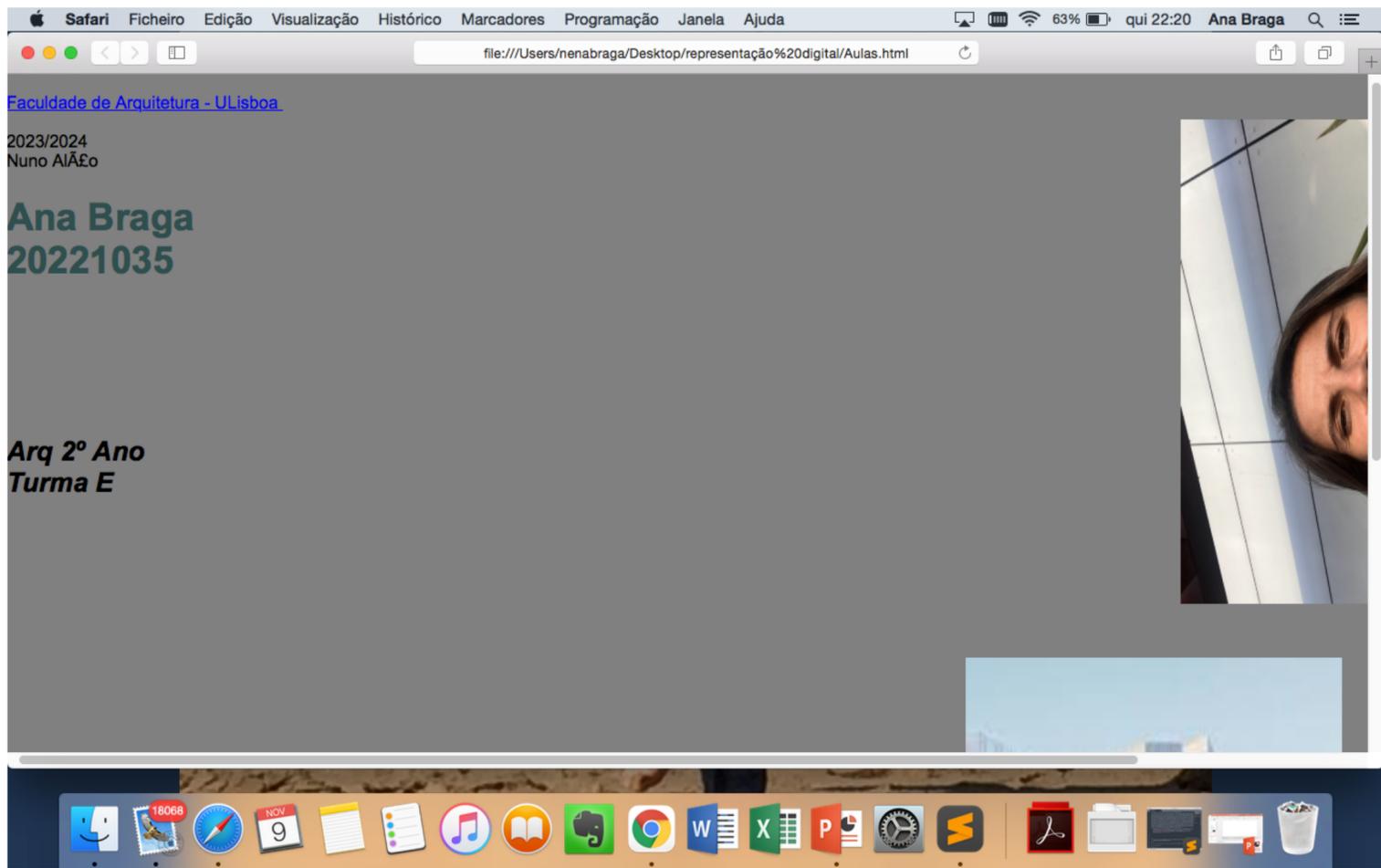
Ê ê

Õ õ

CSS Tutorial para página de html



```
index.html
1 <!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">
2 <!-- saved from url=(1298)https://mail-attachment.googleusercontent.com/attachment/u/2/?ui=2&ik=8fe11dcc49&attid=0.1.0.1.0.1&permmsgid=msg-f:1777476392
3 <html><head><meta http-equiv="Content-Type" content="text/html; charset=UTF-8"><style>body{background-color:tomato;font-family:Arial,monospace};
4
5
6
7
8
9 <div>
10 <div id="m_foto" style="position:absolute; left:600px;width:430px;height:50px;z-index:0 ;margin-left:300px;margin-bottom:250px">
11 <br>
12 <br>
13 <br></div>
14 <div class="quadro">
15 <br>
16 <img></div>
17 <div class="m_quadro">
18 <u></u>
19 <a href="https://www.google.com/url?q=http://www.fa.ulisboa.pt/&amp;source=gmail-html&amp;ust=1695410917200000&amp;usq=A0vVaw3C6k_0GiQ5nE3B-_QI00r4"
20 target="_blank" rel="noreferrer">Faculdade de Arquitetura - Ulisboa </a>
21 </div>
22
23 <br>
24 <br>
25 2023/2024
26 <br>
27 Nuno Alão
28 <br>
29
30 <h1><b>Ana Braga </b></h1>
31 <br>
32
33 <br>
34 <br>
35
36 <h3>
37 <font color="black"> <i>20221035
38 <br>
39 <br>
40 </pre>
```



ReDig

1ª semana – 22 set

3ª aula- Abrir ficheiro ACADISO.dwg

Model space – zona de trabalho

Paper space – layout

Eixo X – vermelho

Eixo Y – verde

10 U (mm) x 10 U (mm) no último aumento

Unidade de medida = mm

Unidade autocad = m

Escala do autocad = 1/1000

**Conversão 1/1000 -> 1/100 x 10
1/1000 -> 1/20 x 50**

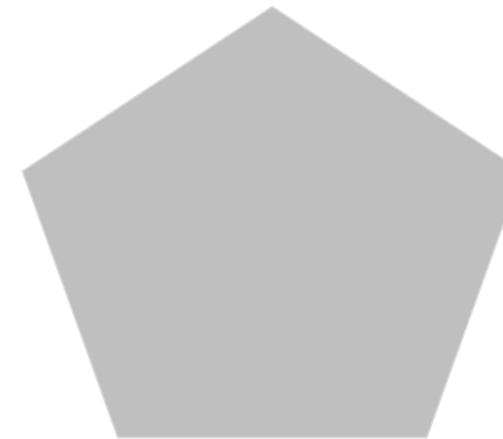
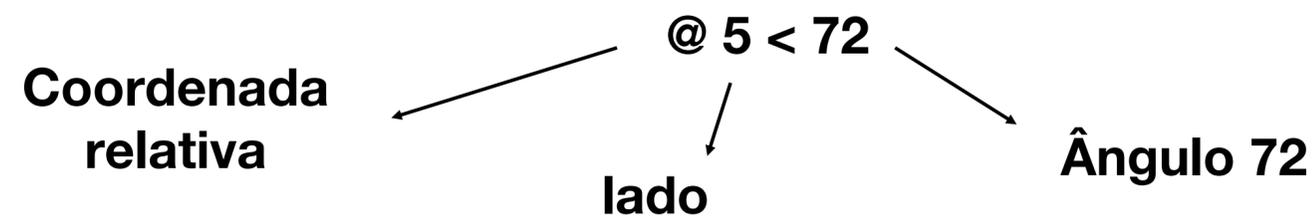
Coordenadas Cartesianas (x,y,z)

Coordenadas polares dist < ângulo

- **ABSOLUTAS** – Relativas ao (0,0,0)

- **RELATIVAS** – relativas ao ponto anterior

Para fazer um pentágono em autocad: sabe-se que o ângulo é 72 ° e se o lado for 5 cm



3ª aula- Abrir ficheiro ACADISO.dwg

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10 U (mm) x 10 U (mm) no último aumento

Unidade de medida = mm

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Escala do autocad = 1/1000

**Conversão 1/1000 -> 1/100 x 10
1/1000 -> 1/20 x 50**

Medidas e proporções

Nocão de escala: Representação de realidade em proporção

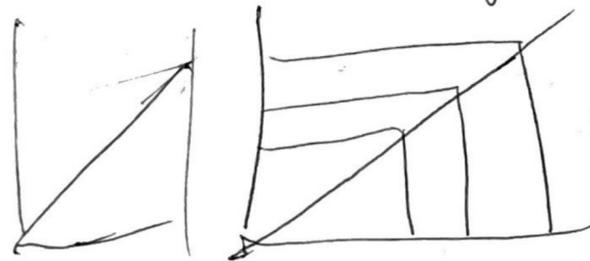
Relação entre as dimensões reais de 1 objecto e as dimensões representadas

1 pé = 30,5 cm
1 pol = 2,54 cm

⚠ Se não fizer alterações no Cad a impressora é sempre a escala 1/1000

↳ zoom scale 10x p

Proporção: relação entre duas dimensões de 1 mesmo objecto (ex: largura x altura)



se a diagonal é a mesma as proporções são paralelas

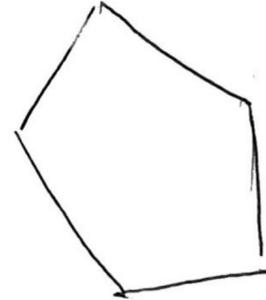
Autocad

L - line

10,10

Shift 3

Coord absolutas - (#)
Coord relativas - (@)



10,10 ↙
L@ 10,72 ↘
@ 10,144 ↘
@ 10,216 ↘
c ↙ (close)

[Tpc] auxiliar
size - CACsize.

4ª aula

F8 orto on/off

CHPROP – change prop

L- line

PL – polyline

COPY

MOVE

ROTATE

HATCH – preencher forma

GrOUP- agrupar

UNGROUP – desagrupar

DTEXT – escrever

Z – zoom

E- extents

ALIGN - alinhar

DIMR= dim x sf

DIST

SCALE

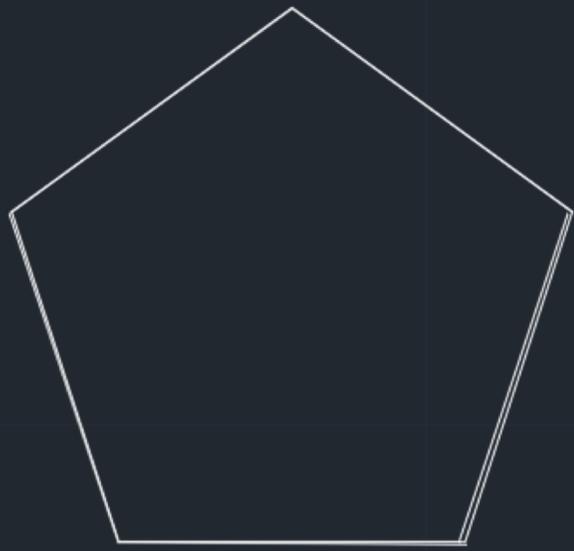
LIST

O – offset

STRETCH - esticar

EXTEND - extrapolar

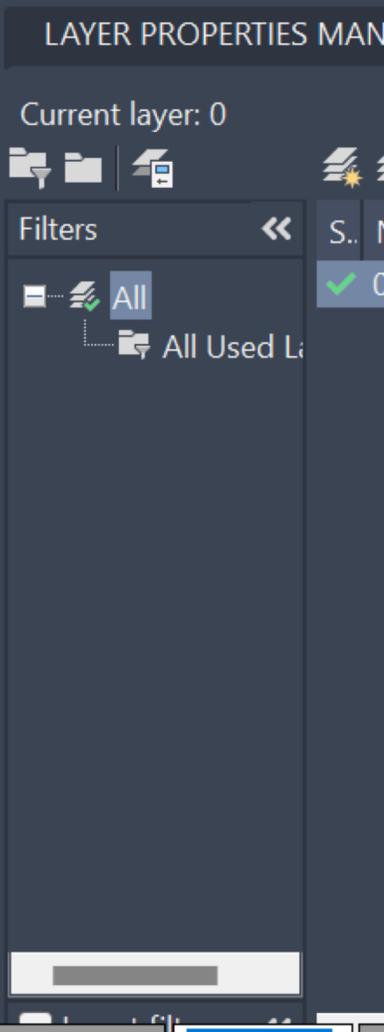
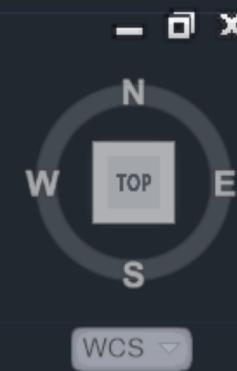
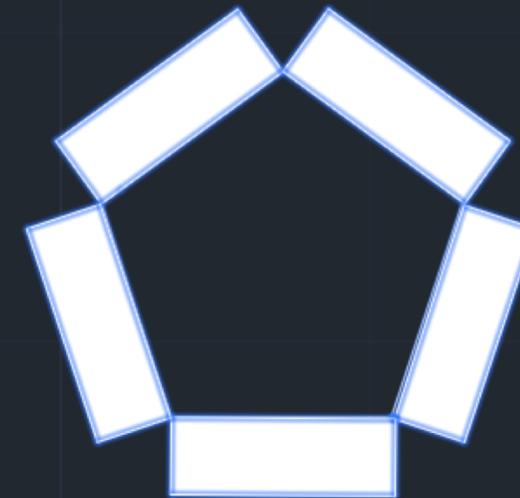
TRIM - cortar



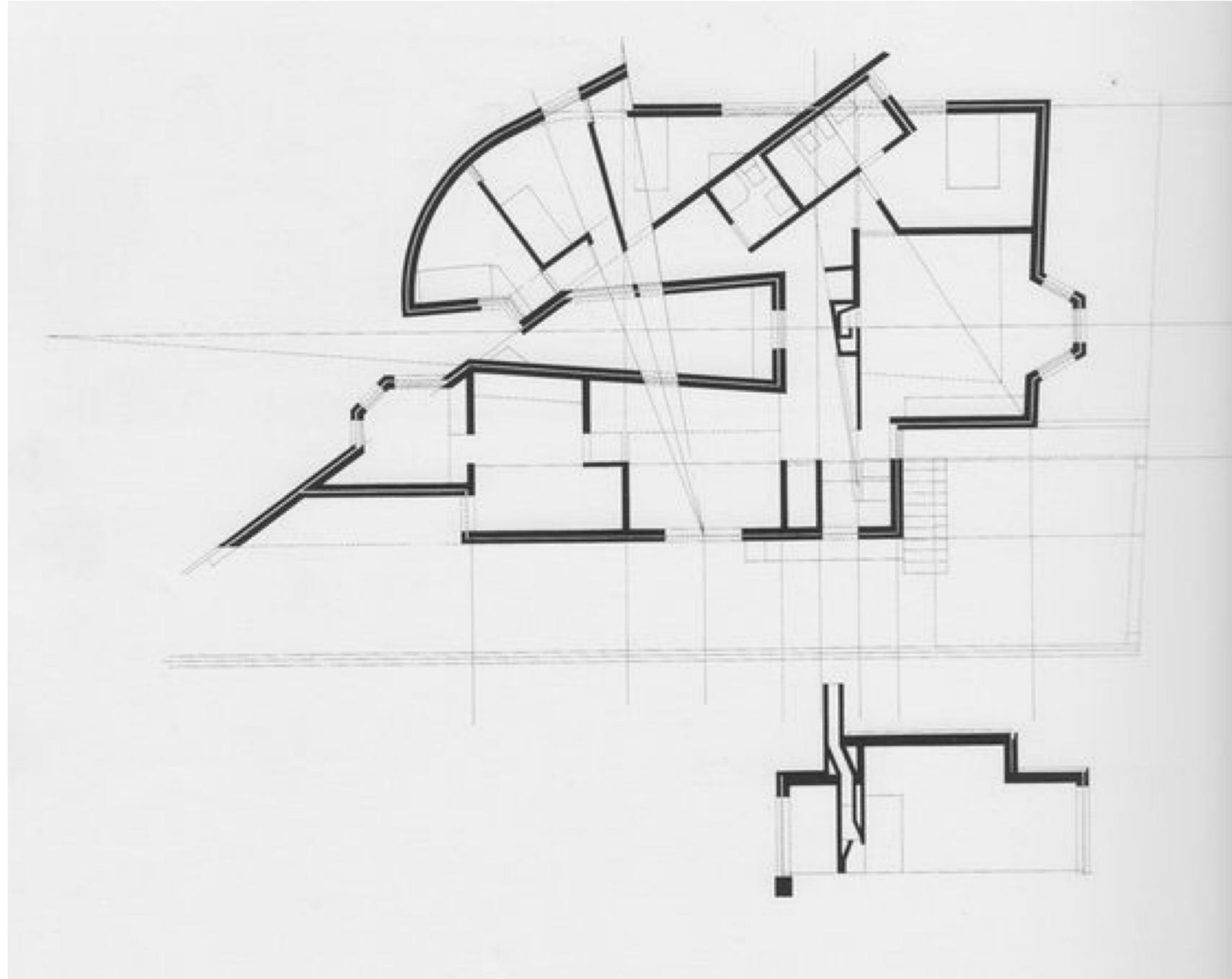
Rotate e move
Hatch solid



Polyline
Copy



Casa António Carlos Siza



ReDig

3^a semana – 3 Out



DRAWORDER: FRONT/BACK; ABOVE/UNDER

REGEN- regenera o desenho após muitas alterações

C – circle

NEAREST – linha

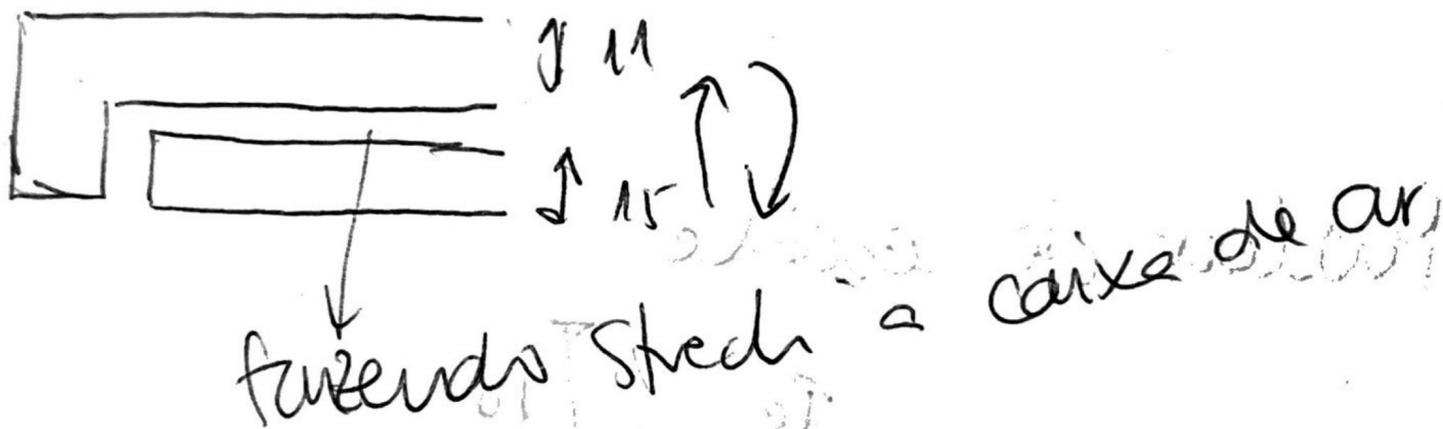
Align

Mudar de escala: factor de escala



6out

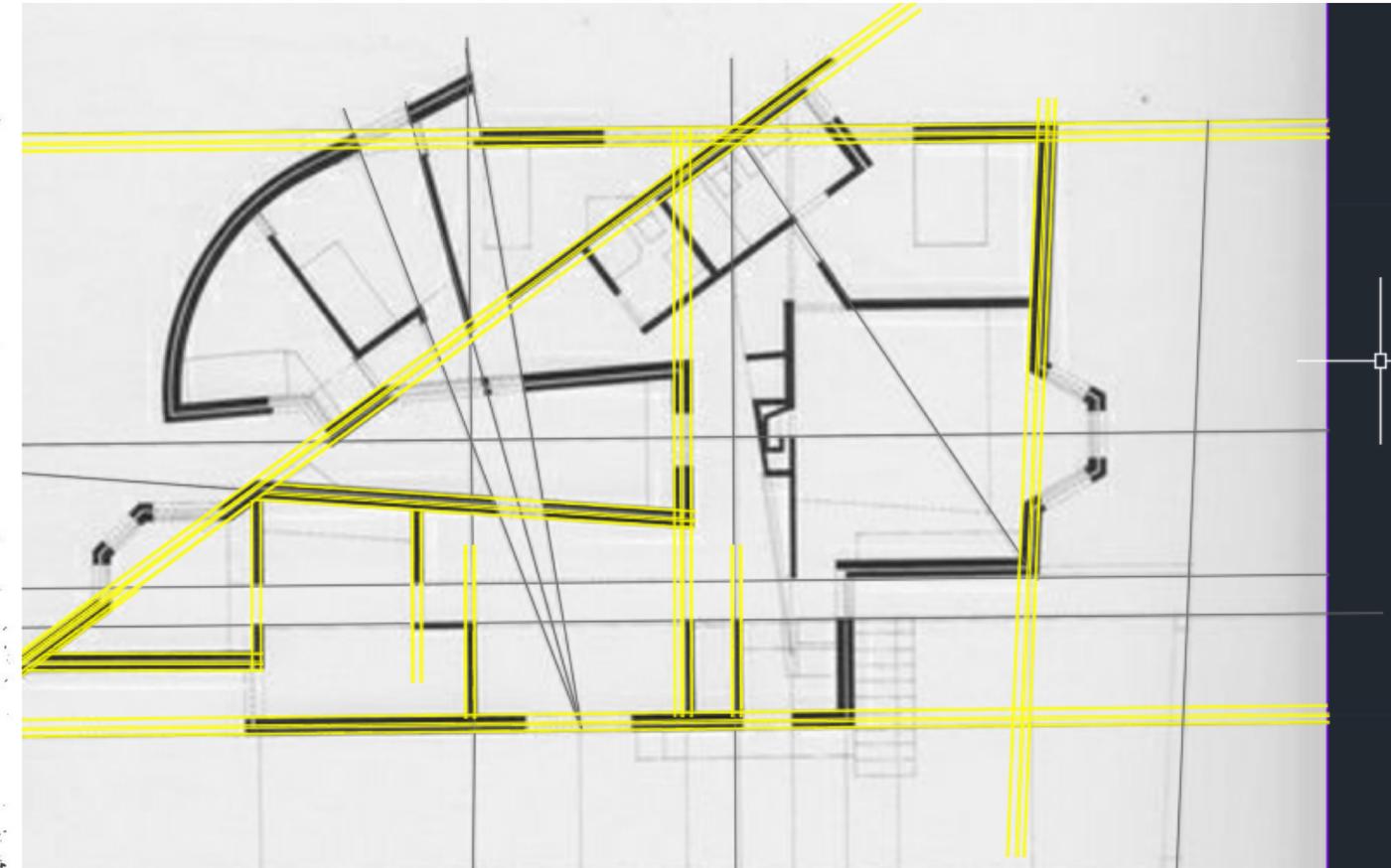
Street serve para estizer para
fora



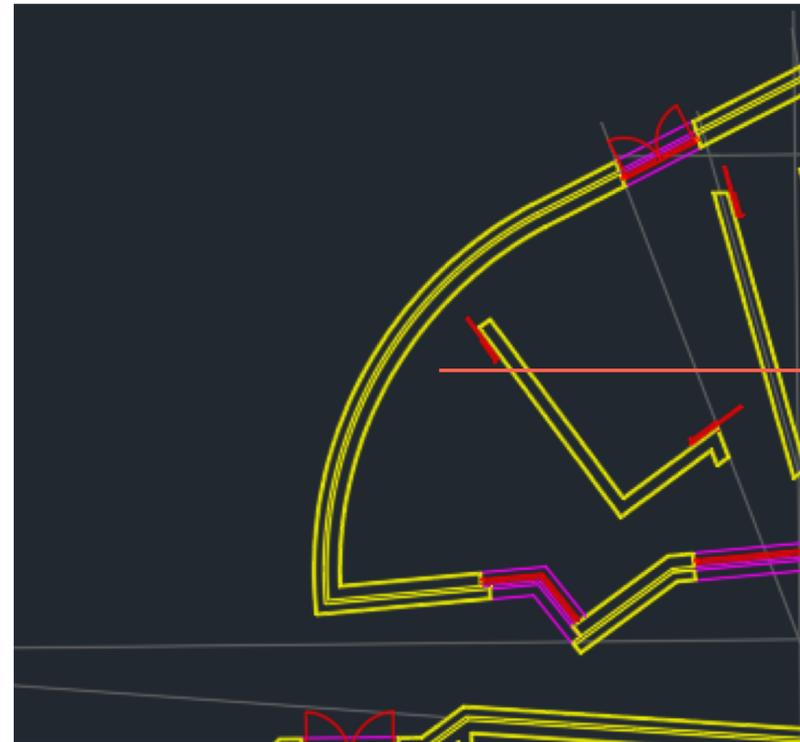
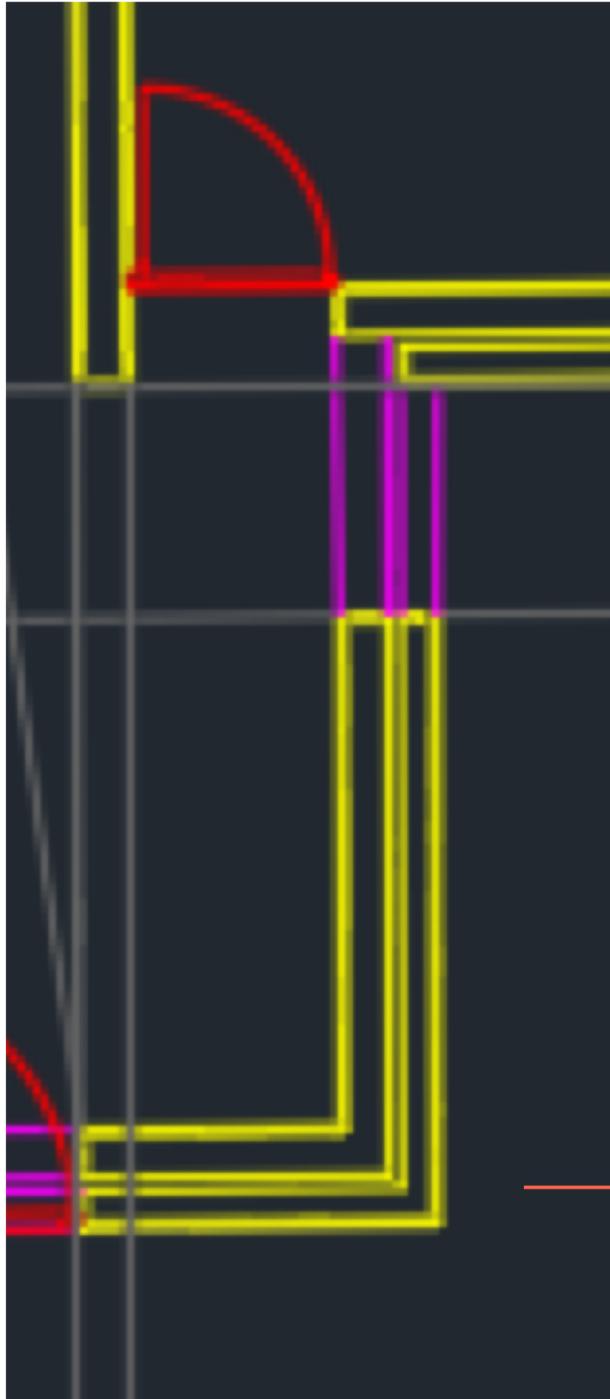
Break → F (1st point)

Match Prop (cópia as propriedades)

Casa António Carlos Siza



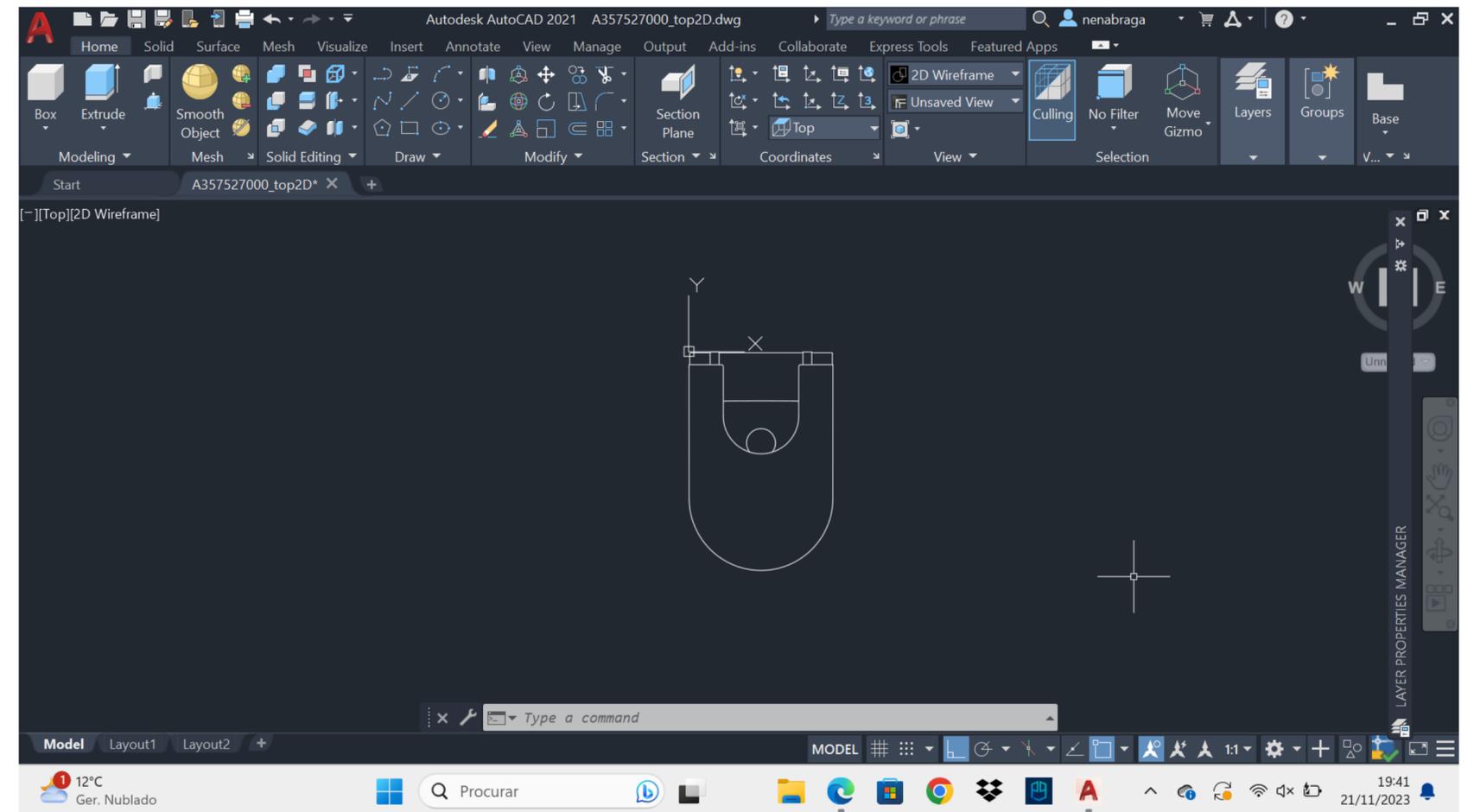
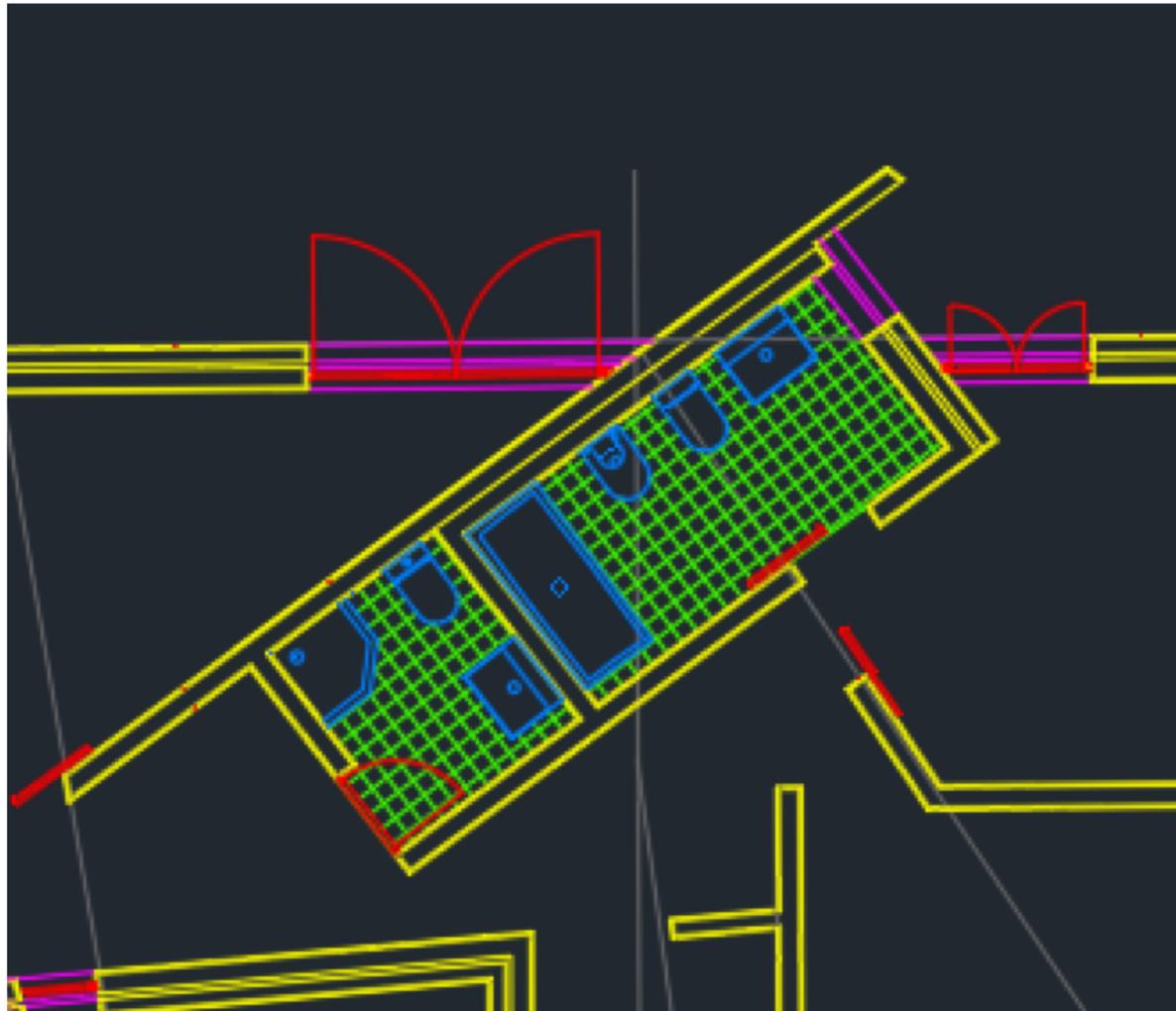
Scale
Decalque geometria e
paredes



**ARC –
comando
para
desenho
de arcos
com dois
ou 3
pontos**

**FILLET – para ligar linhas
separadas em ângulo**

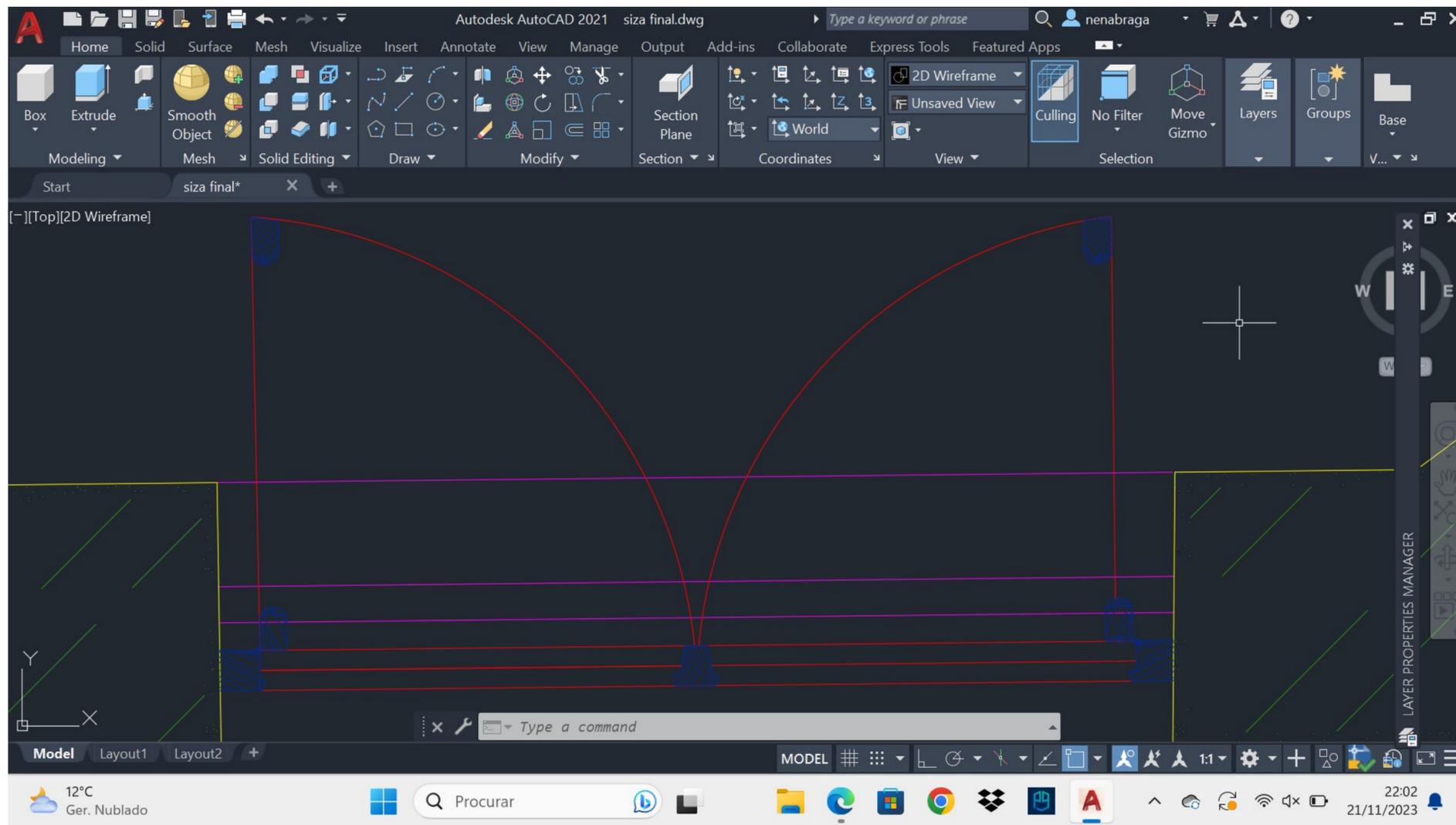
Cinstrução WC com importação de dwg da ROCA



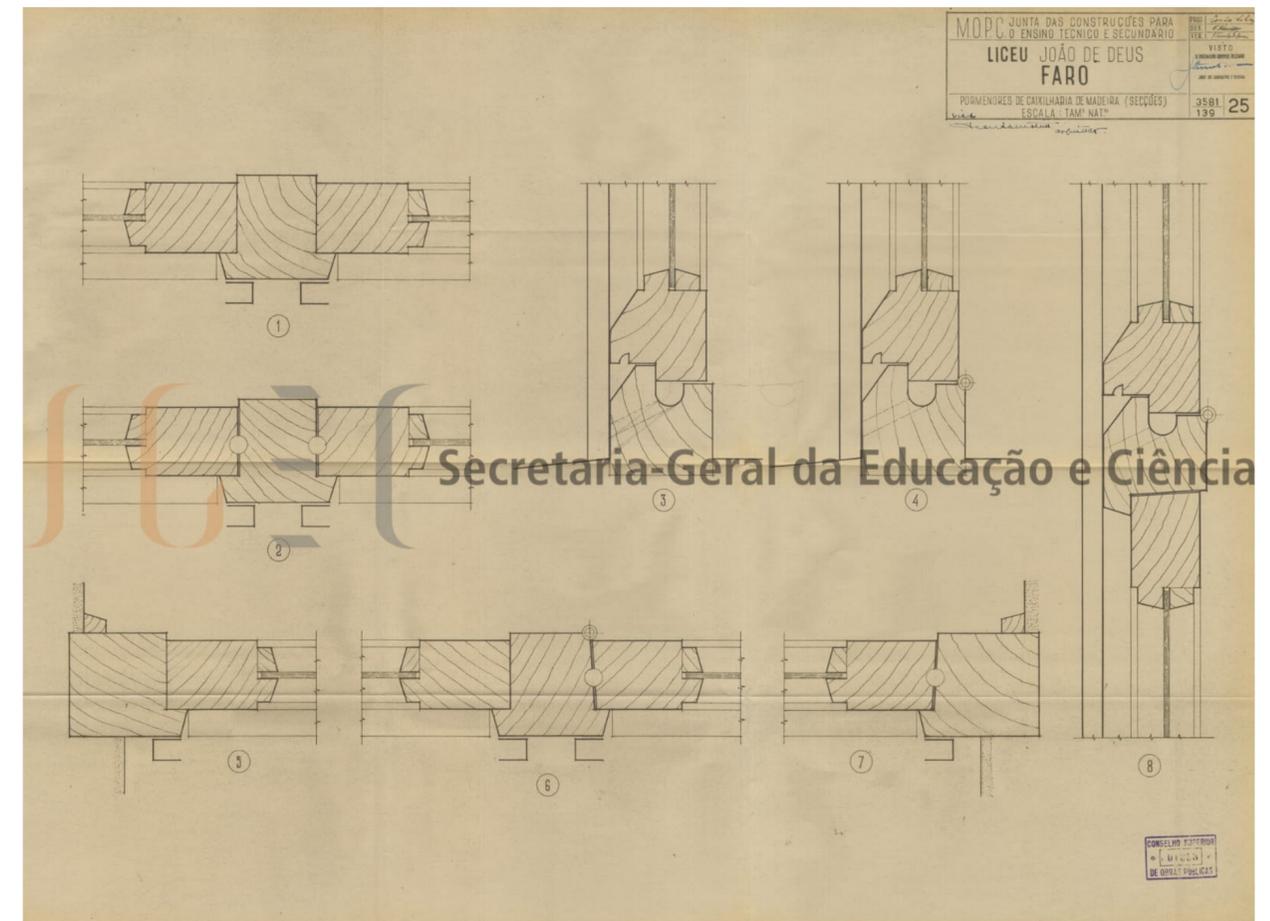
Scale para a esclada adequada e rotate para alocação

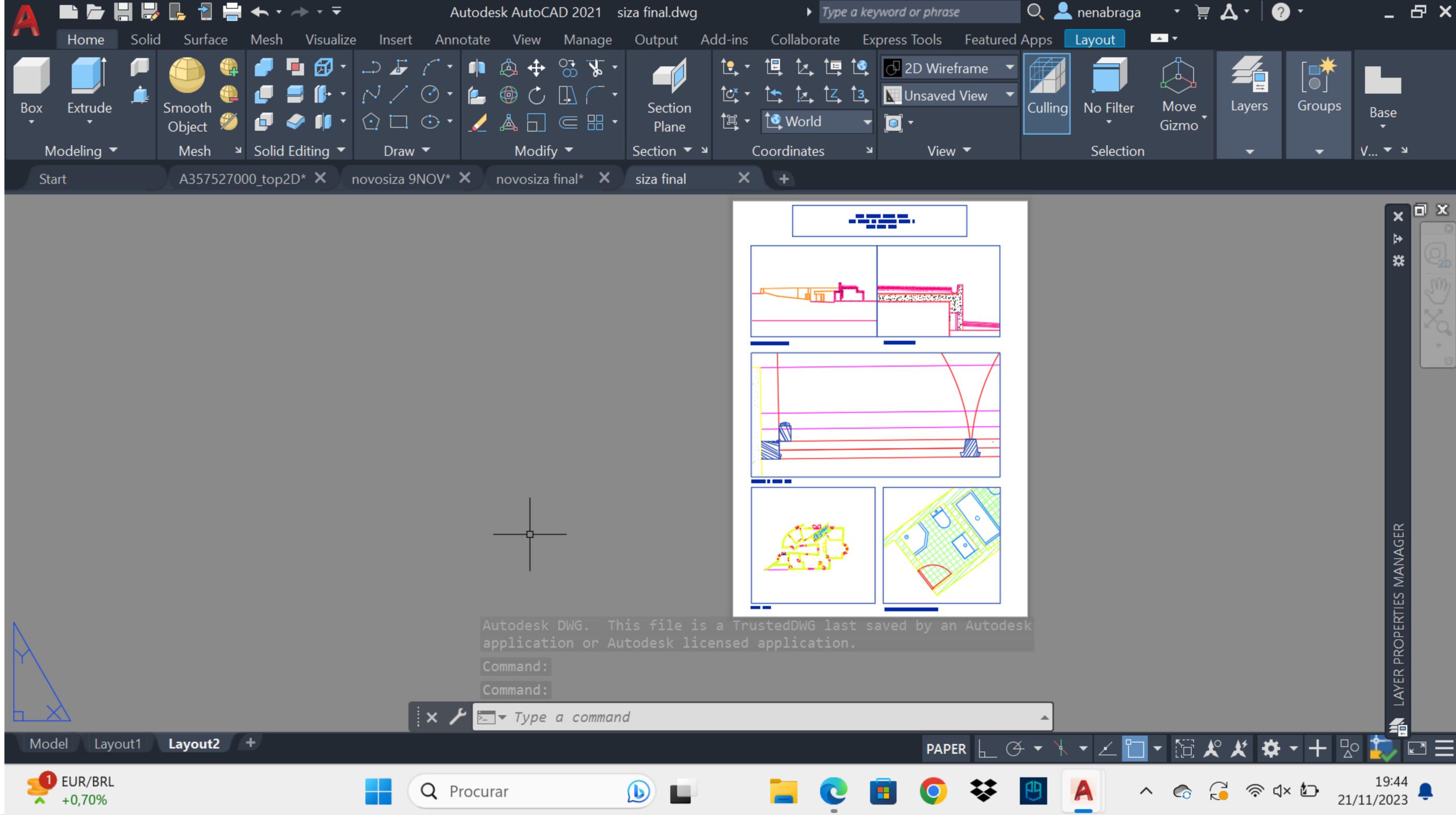
ReDig

4^a semana – 13 Out



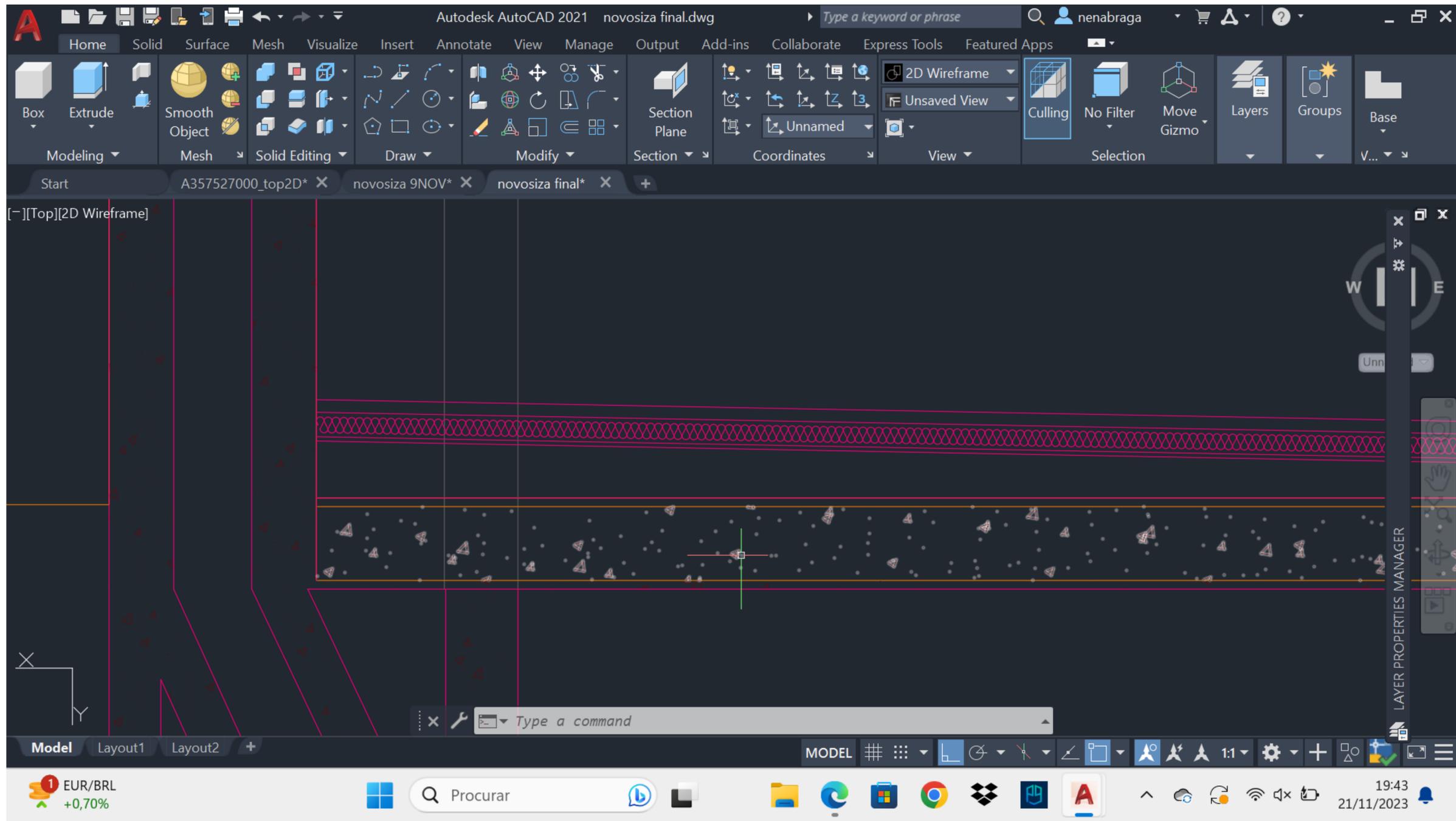
**Construção de um detalhe por decalque
Janela, detalhe da aduela**





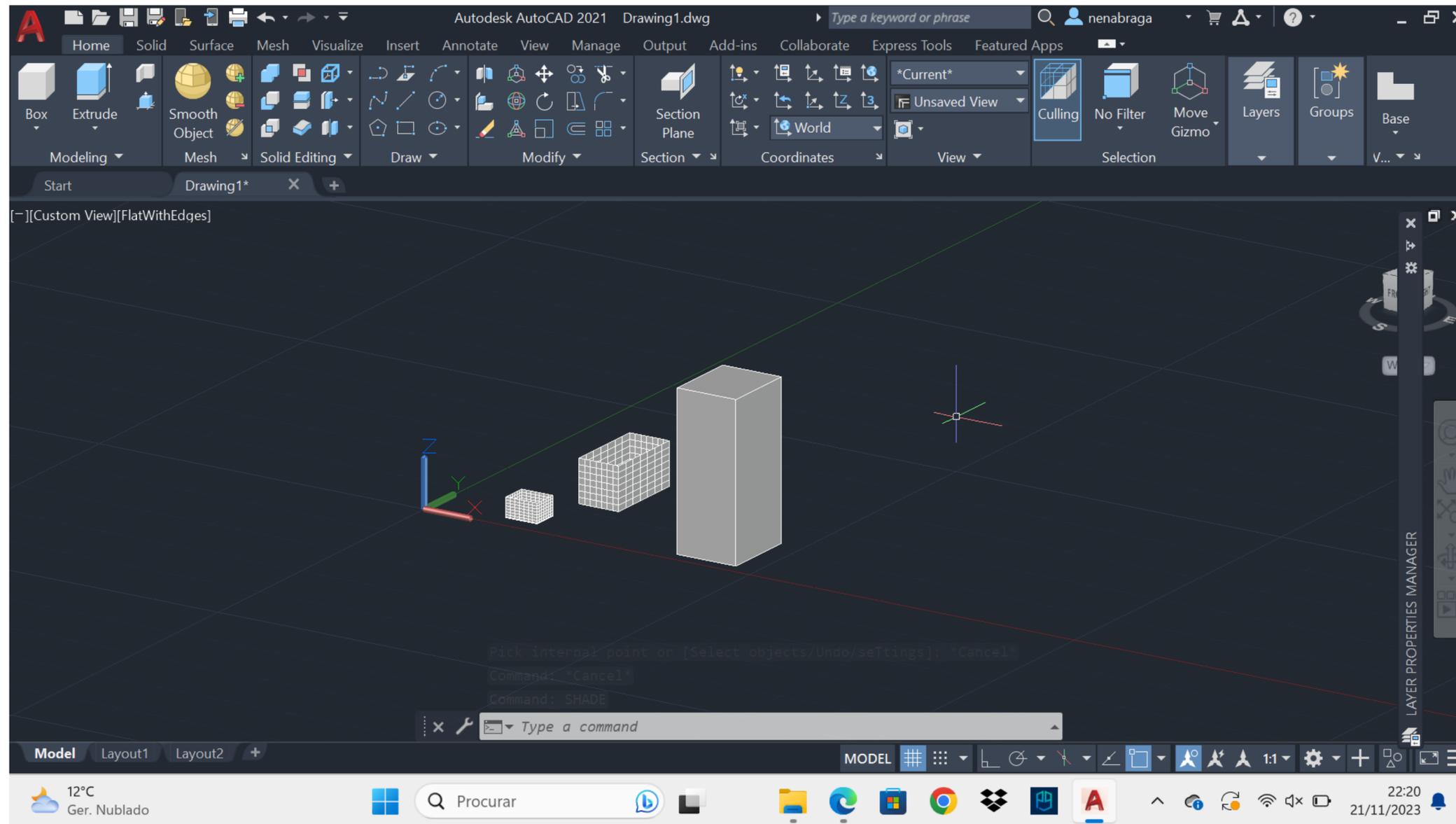
ReDig

5ª semana – 20 Out

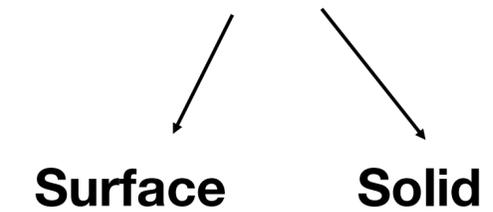


HATCH
Concreto
Cobertura
Isolamento

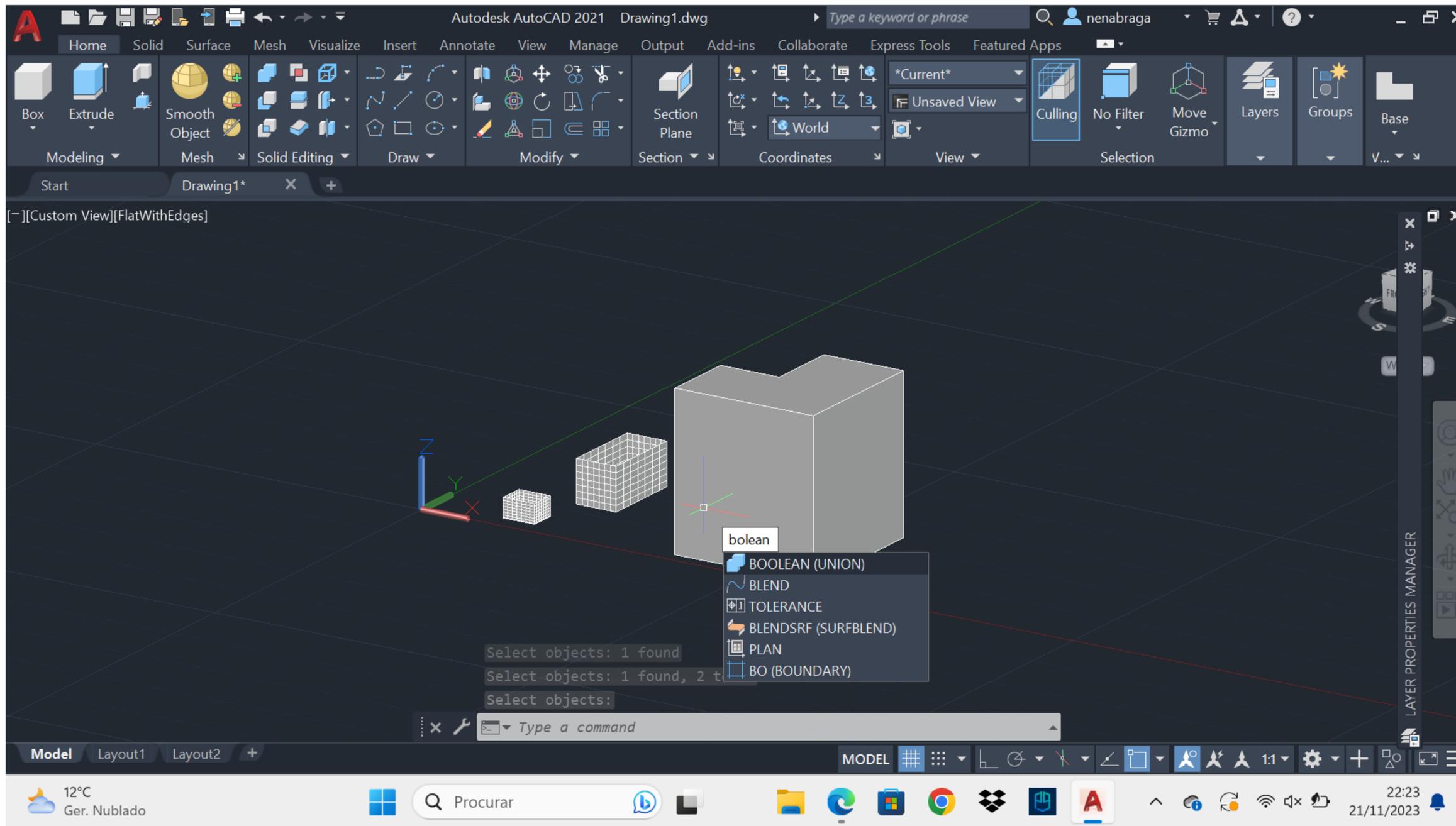
ReDig 6^a semana – 27 Out



**EXTRUDE polígonos
MO (mode)**



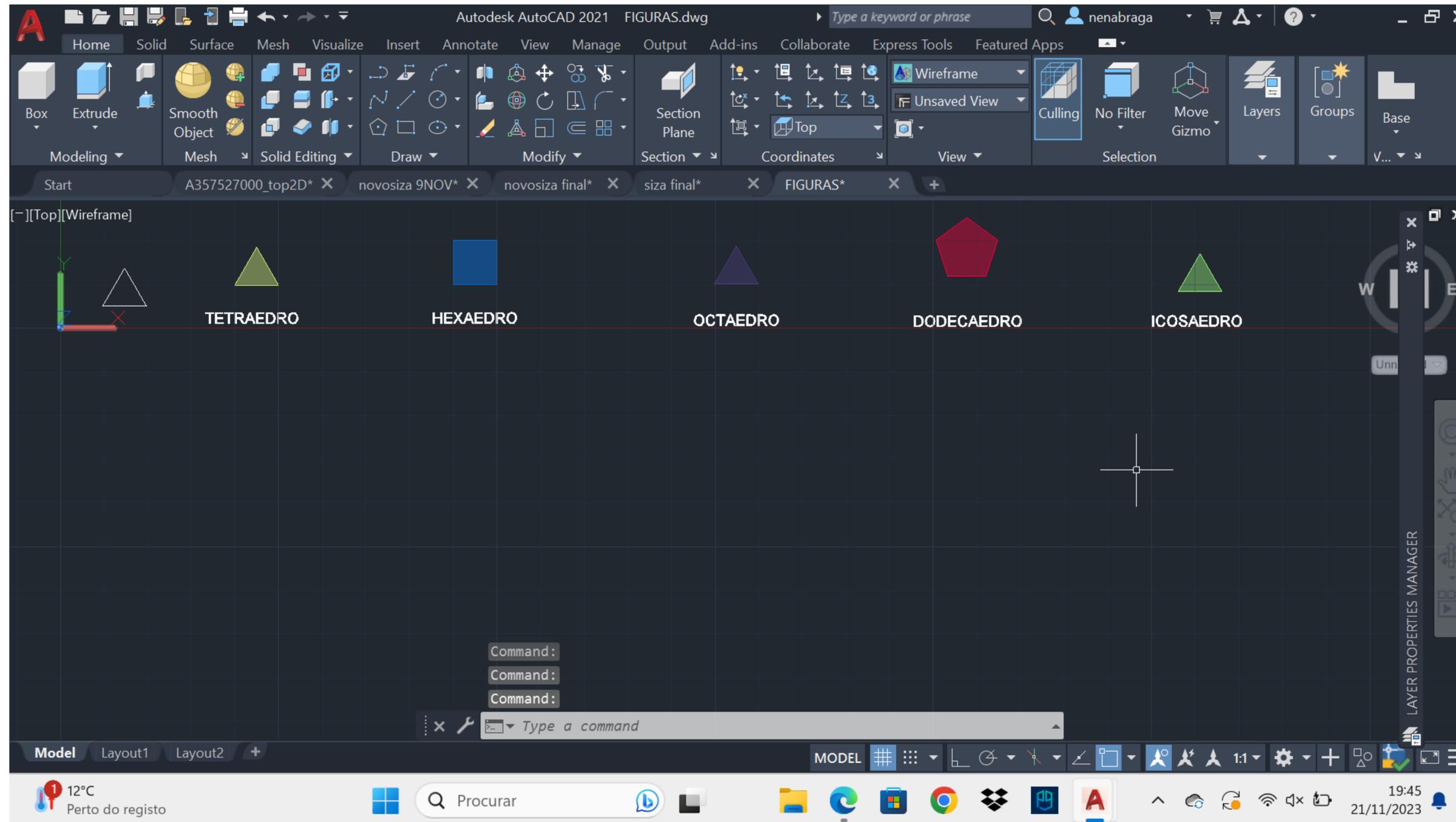
**SHADE
ORBIT**



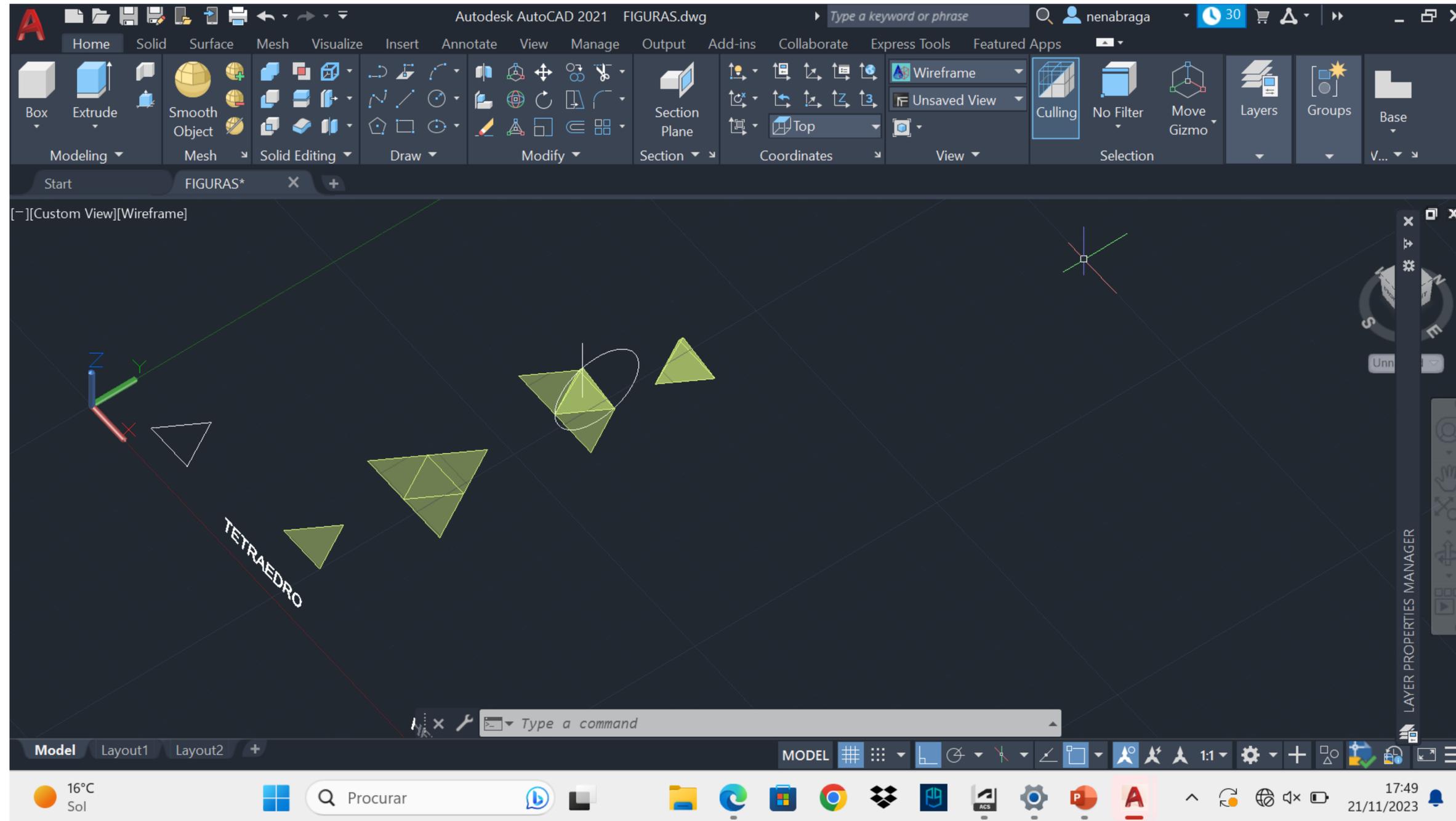
BOOLEAN

**UNION
SUBTRACT
INTERSECT**

Construção de Sólidos Platônicos

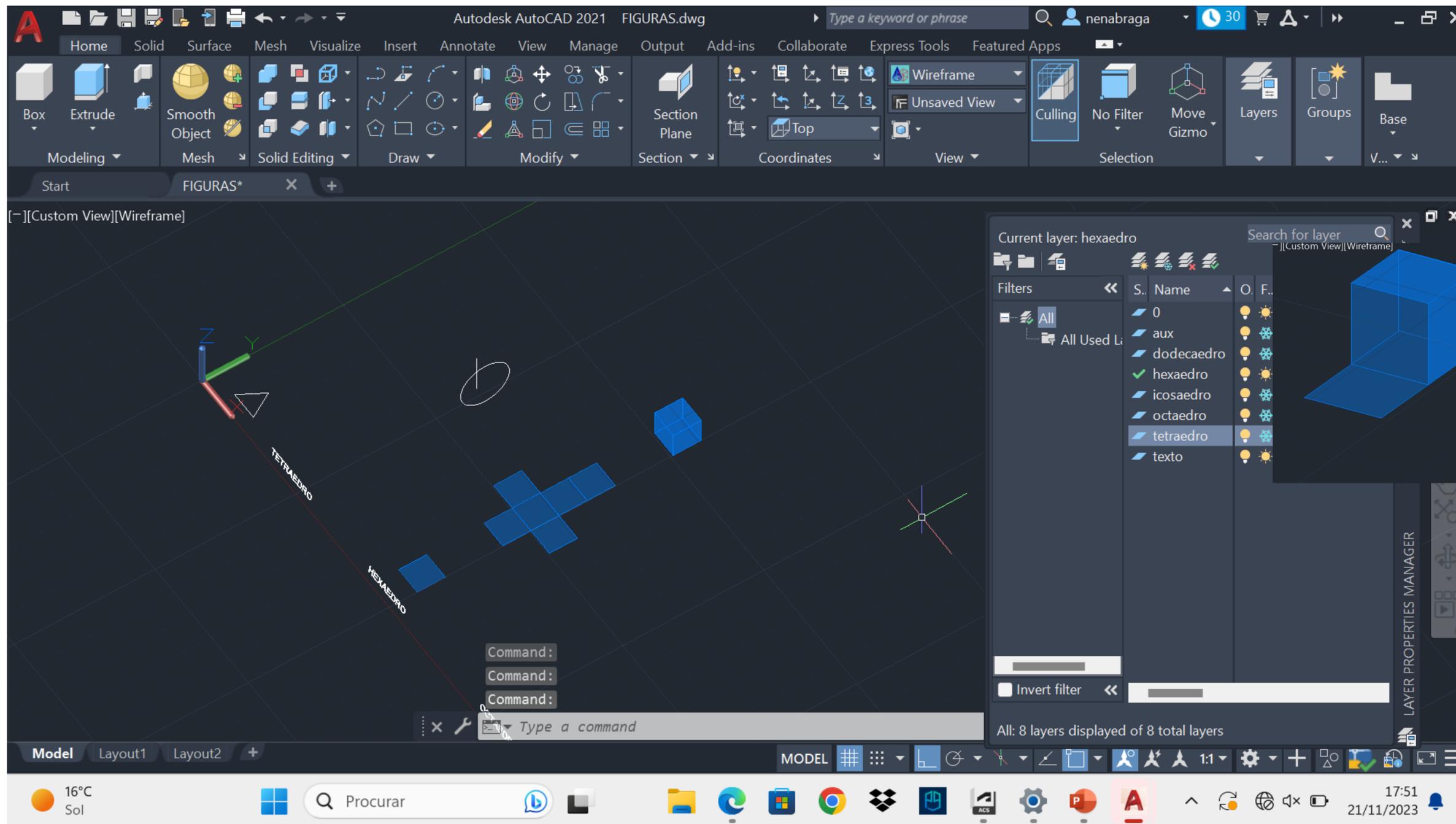


Tetraedro



- Eixo centro da base 90°
- 3DROTATE para elevação das faces triangulares

Hexaedro

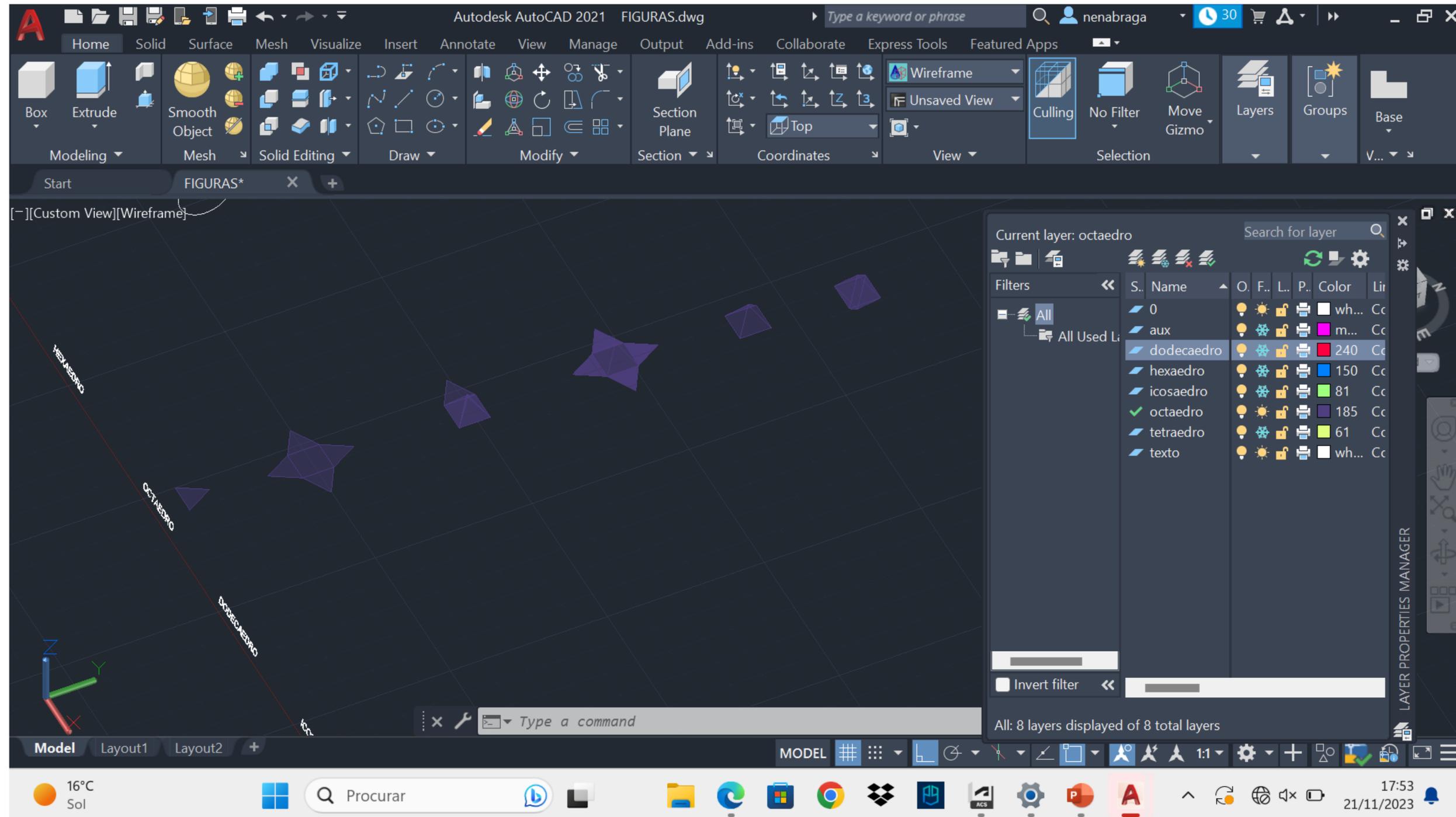


**Com o 3D ROTATE
dobra-se a face do
cubo segundo o eixo da
aresta respectiva**

ReDig

8ª semana – 10 Nov

Octaedro



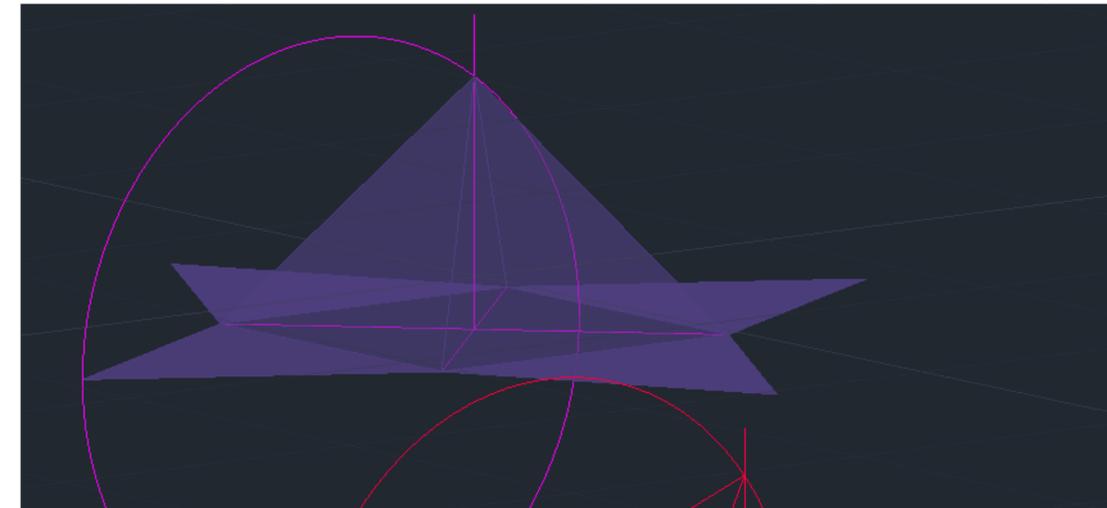
ReDig

8ª semana – 10 Nov

Octaedro



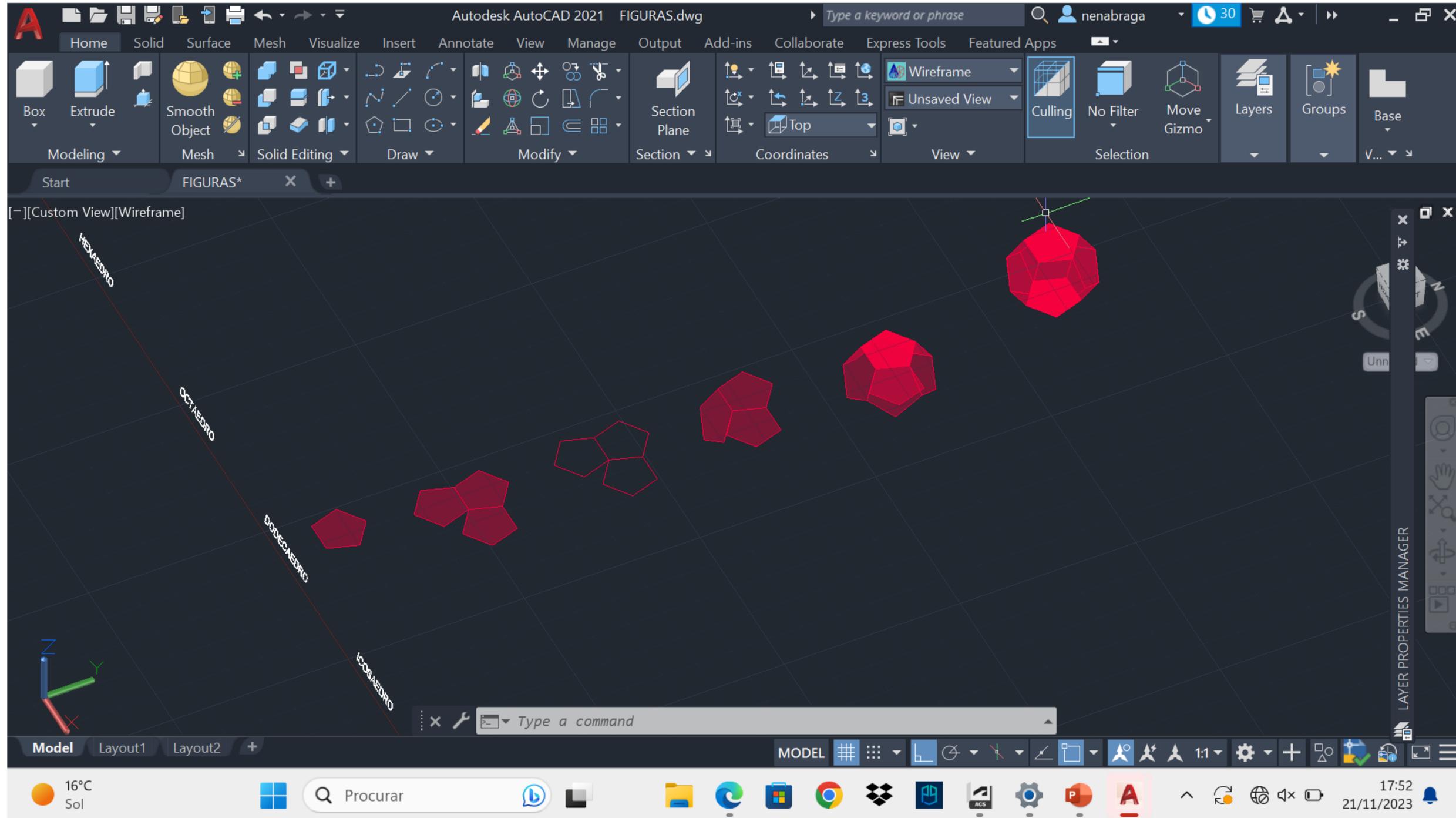
ALIGN na construção desta figura
(dos vértices dos triângulos com os
vértices do quadrado da base)



ARRAY de 4 faces
3D MIRROR para obtenção de pirâmide
quadrangular em espelho e **ALIGN** de ambas



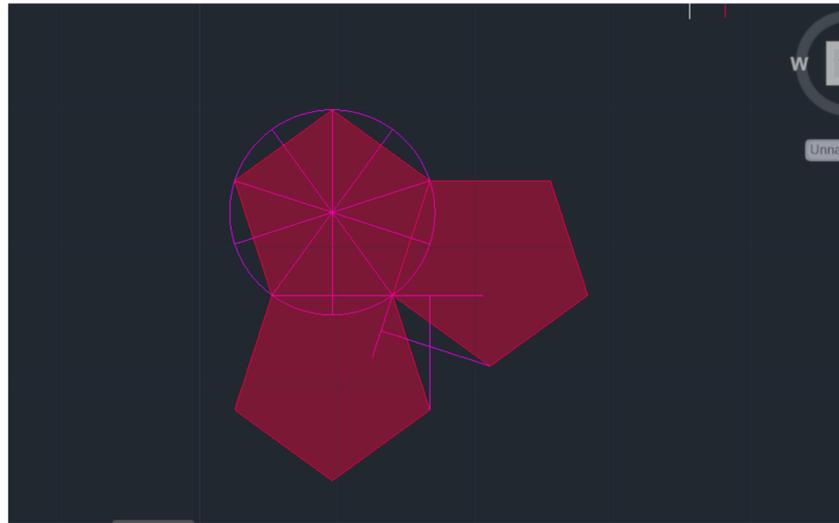
Dodecaedro



ReDig

9^a semana – 14 NOV

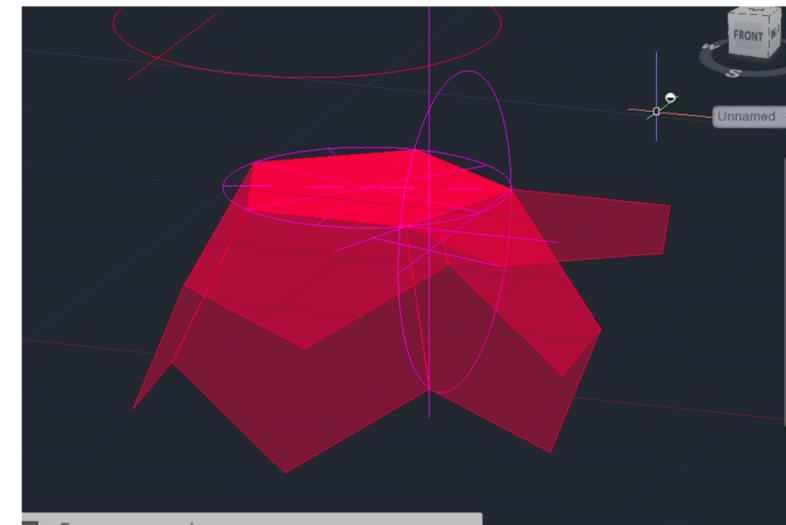
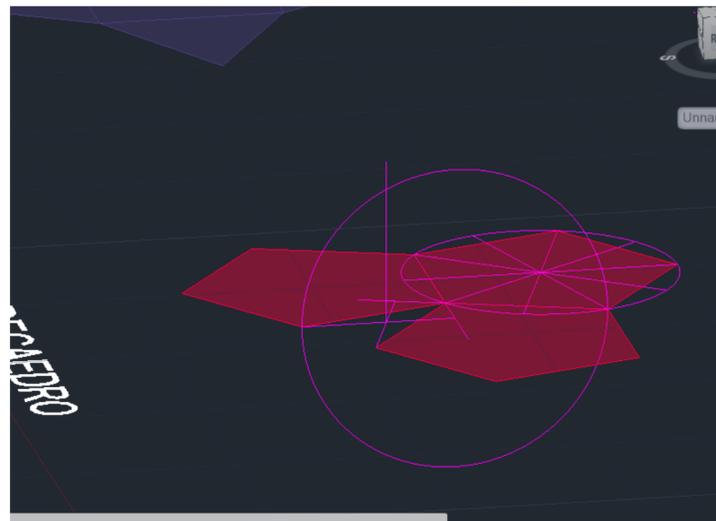
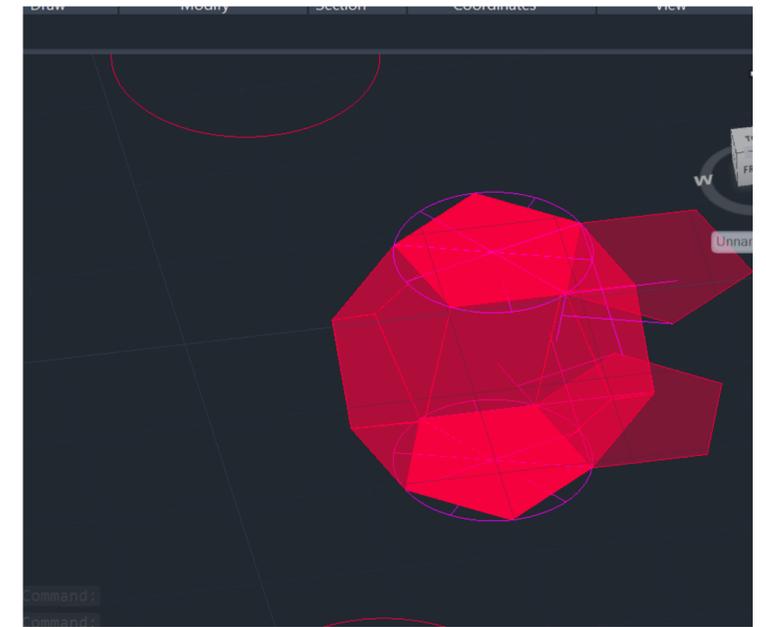
Dodecaedro



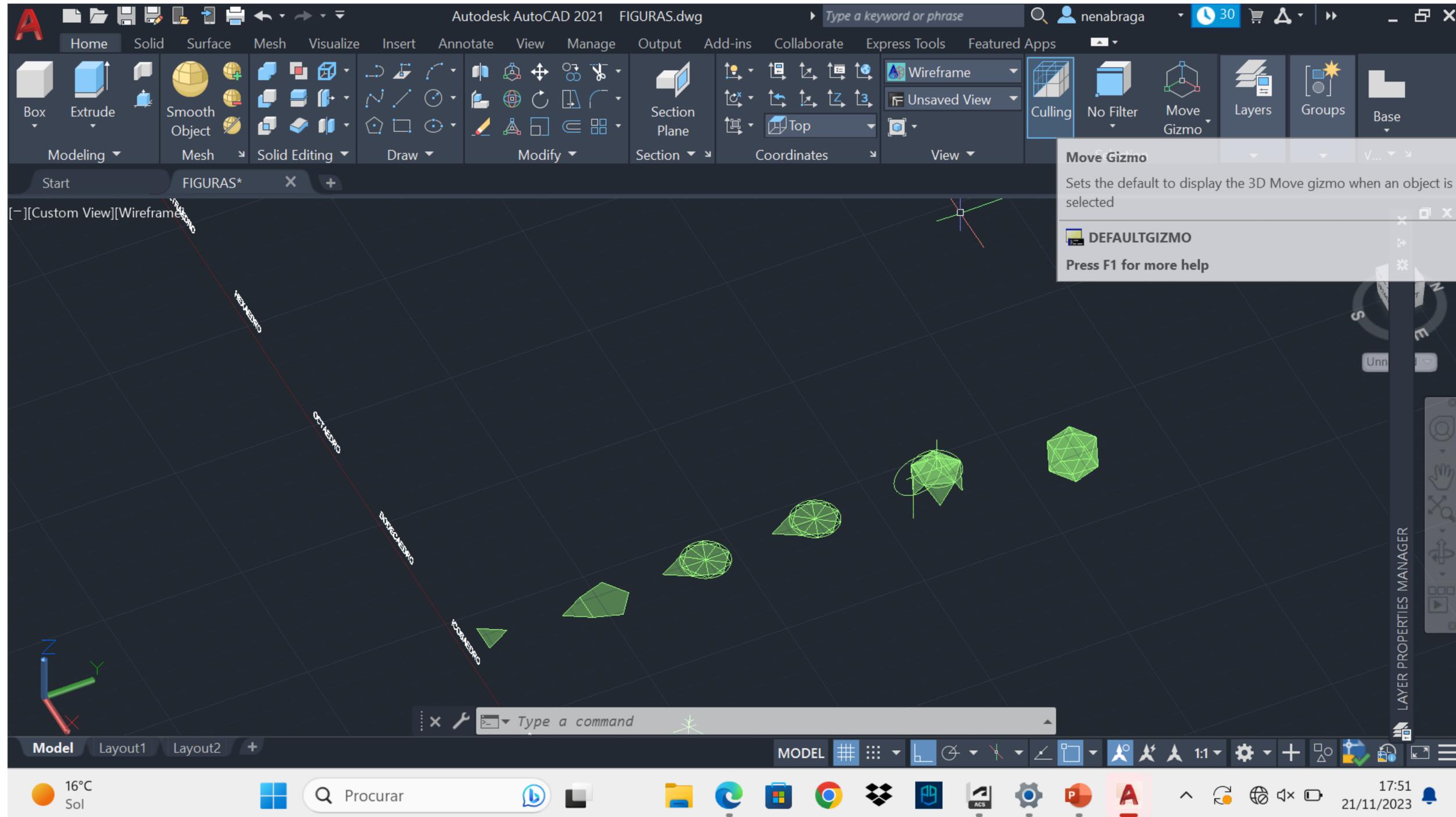
3d rotate

**Array 360°
5 faces**

**Mirror
3d rotate**



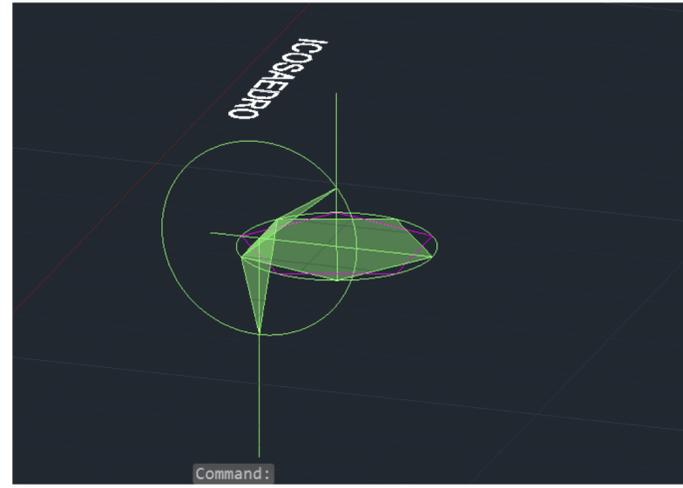
Icosaedro



ReDig

9^a semana – 17 NOV

Icosaedro

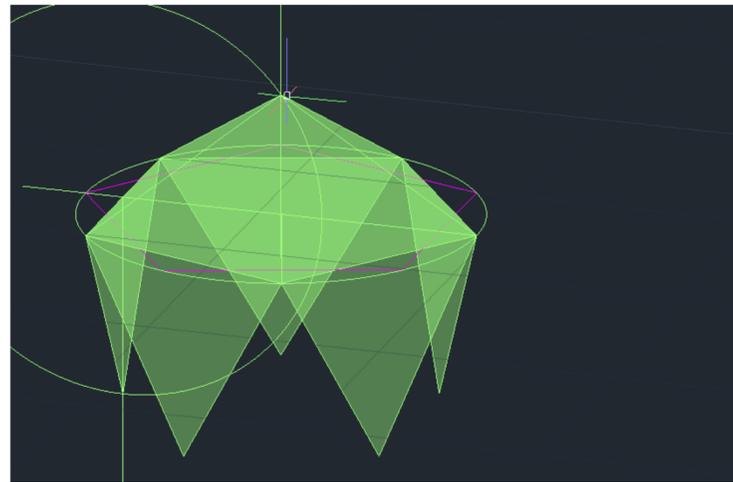
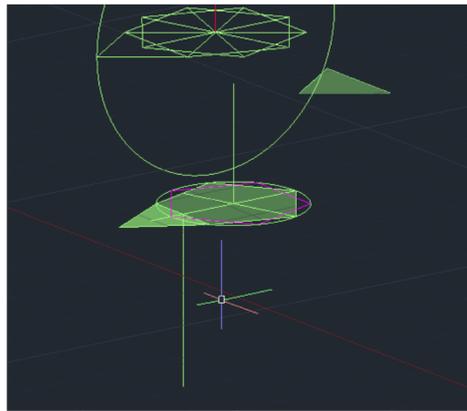


**Pentagono + mirror
pentagono**

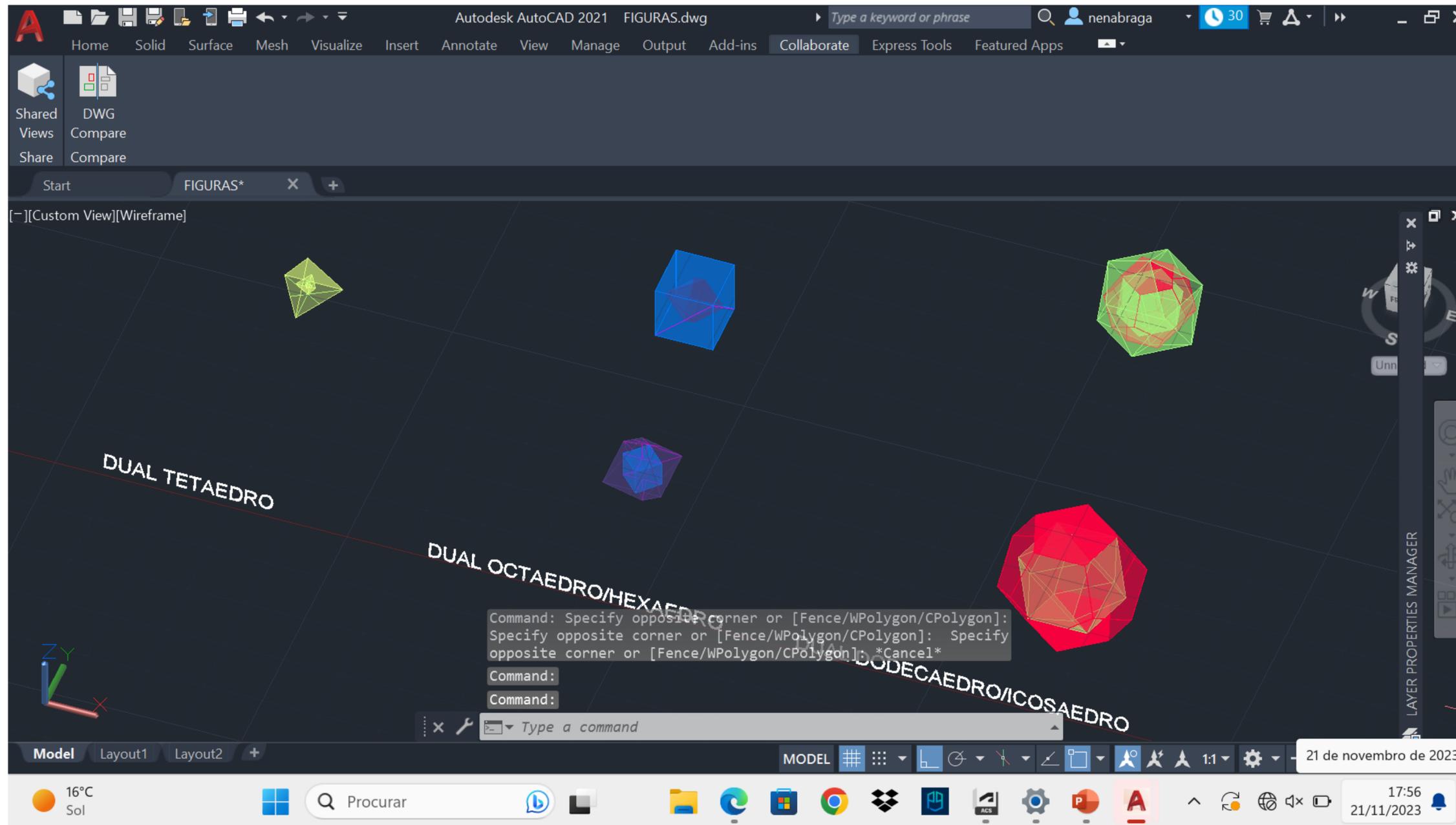
Rotate 3 d

Array

Antiprisma

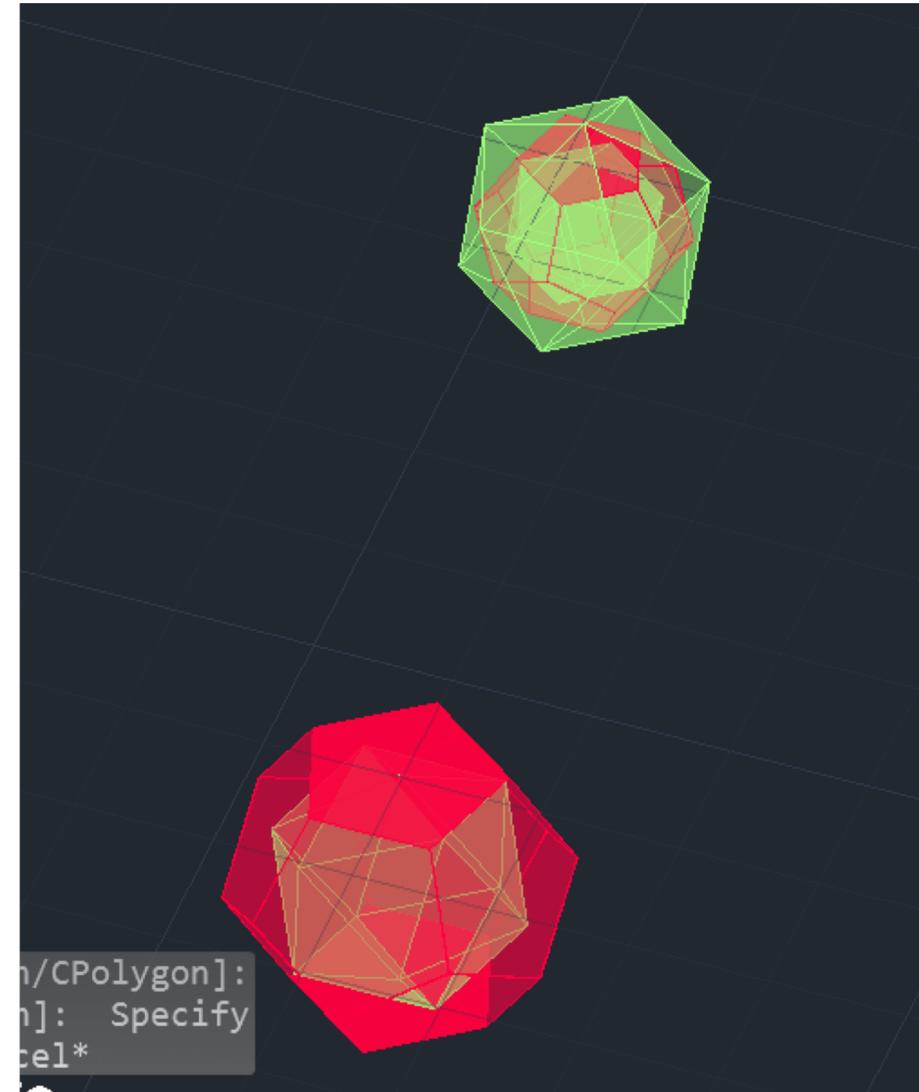
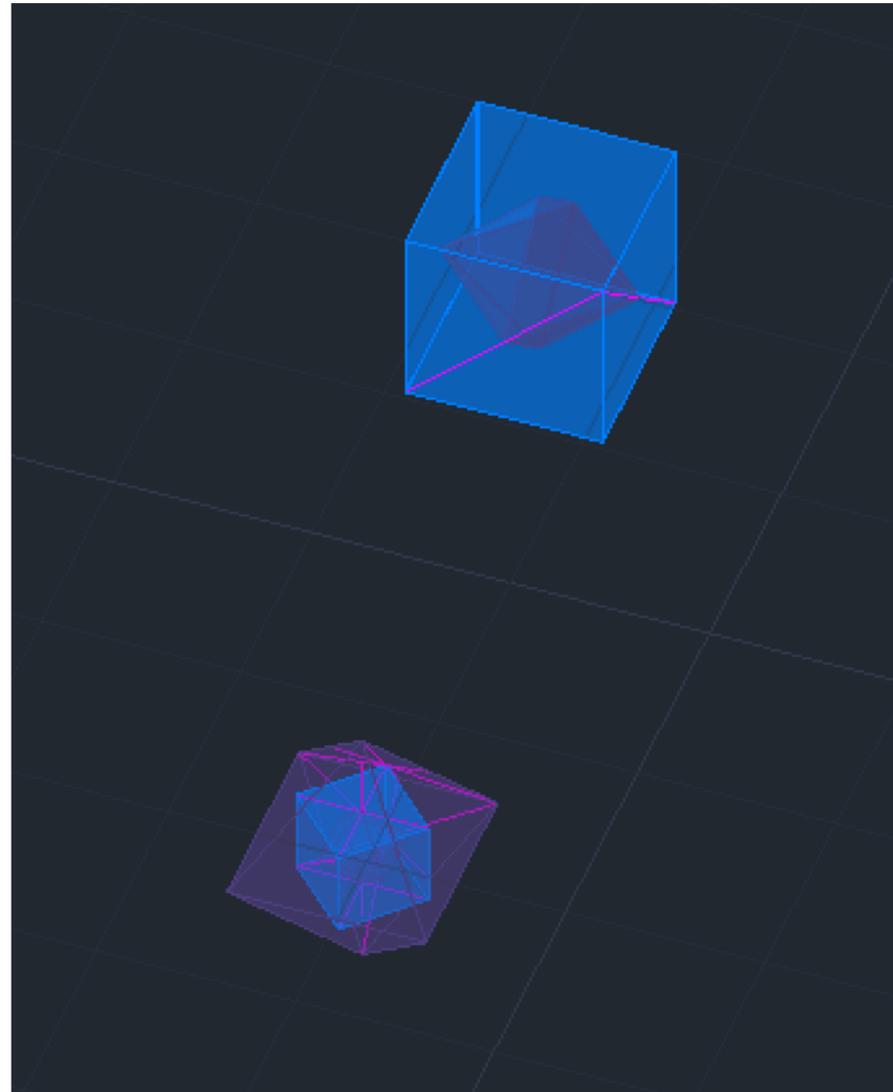
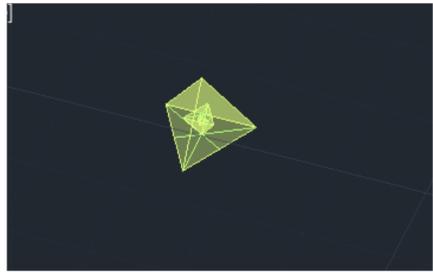


Sólidos duais

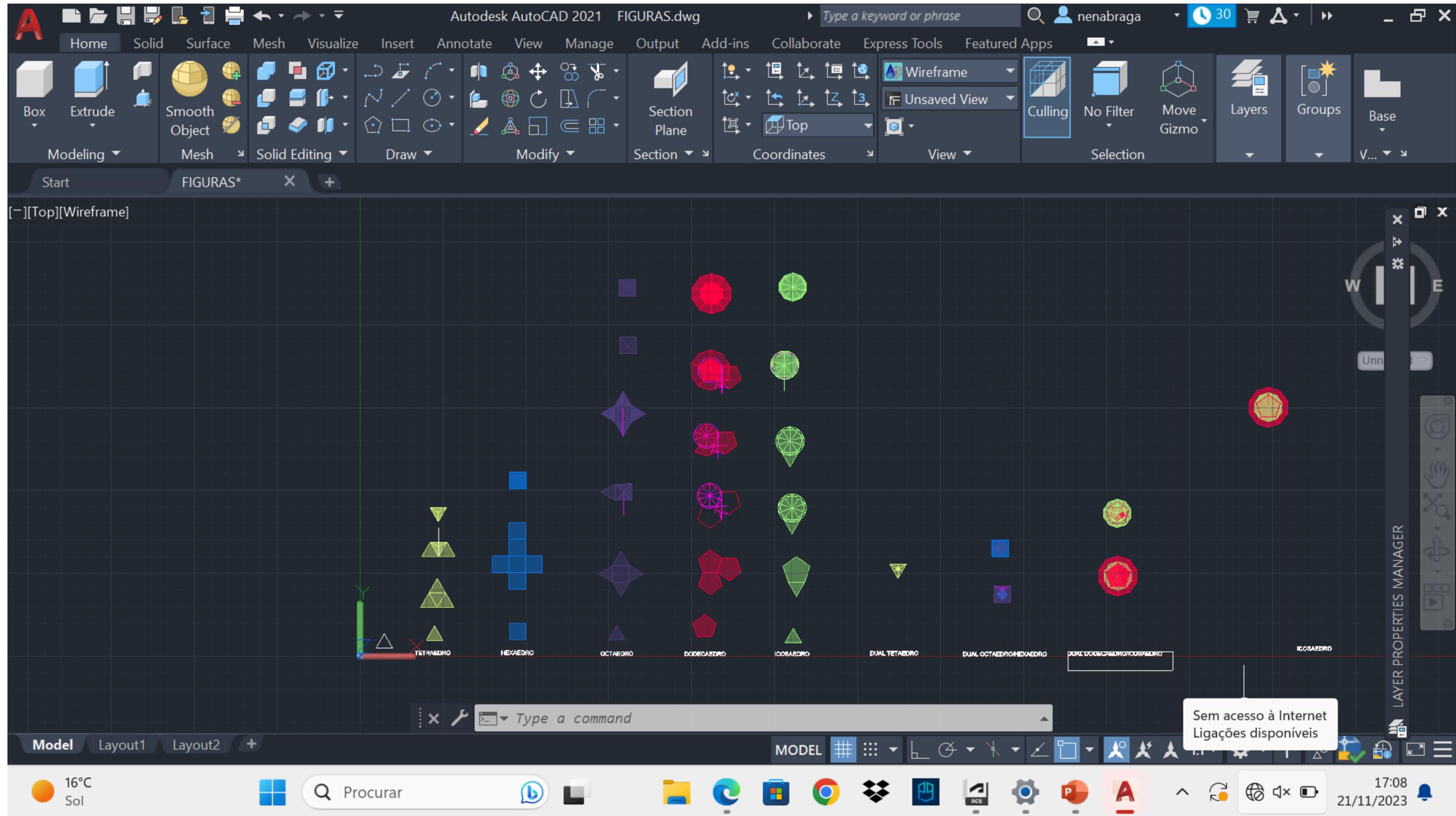


**Sólidos duais-
vértices inscritos
nas faces do dual
correspondente**

Sólidos duais

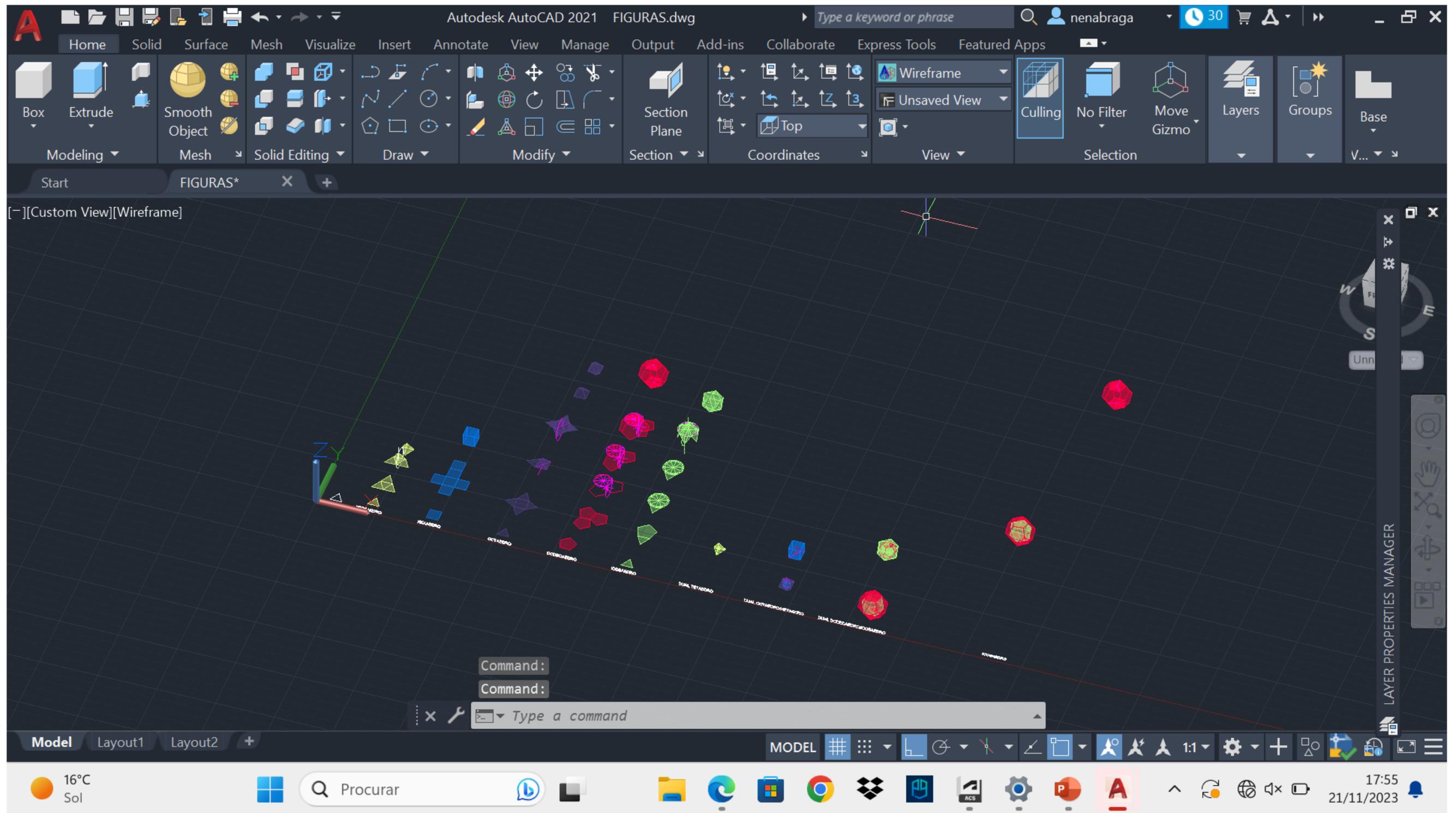


**Sólidos duais:
vértices inscritos
nas faces do dual
correspondente**



ReDig

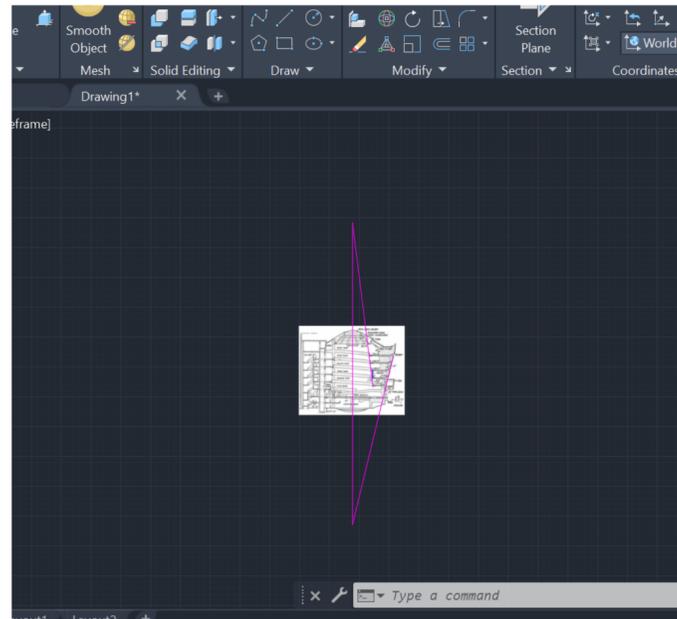
9ª semana - 17 NOV



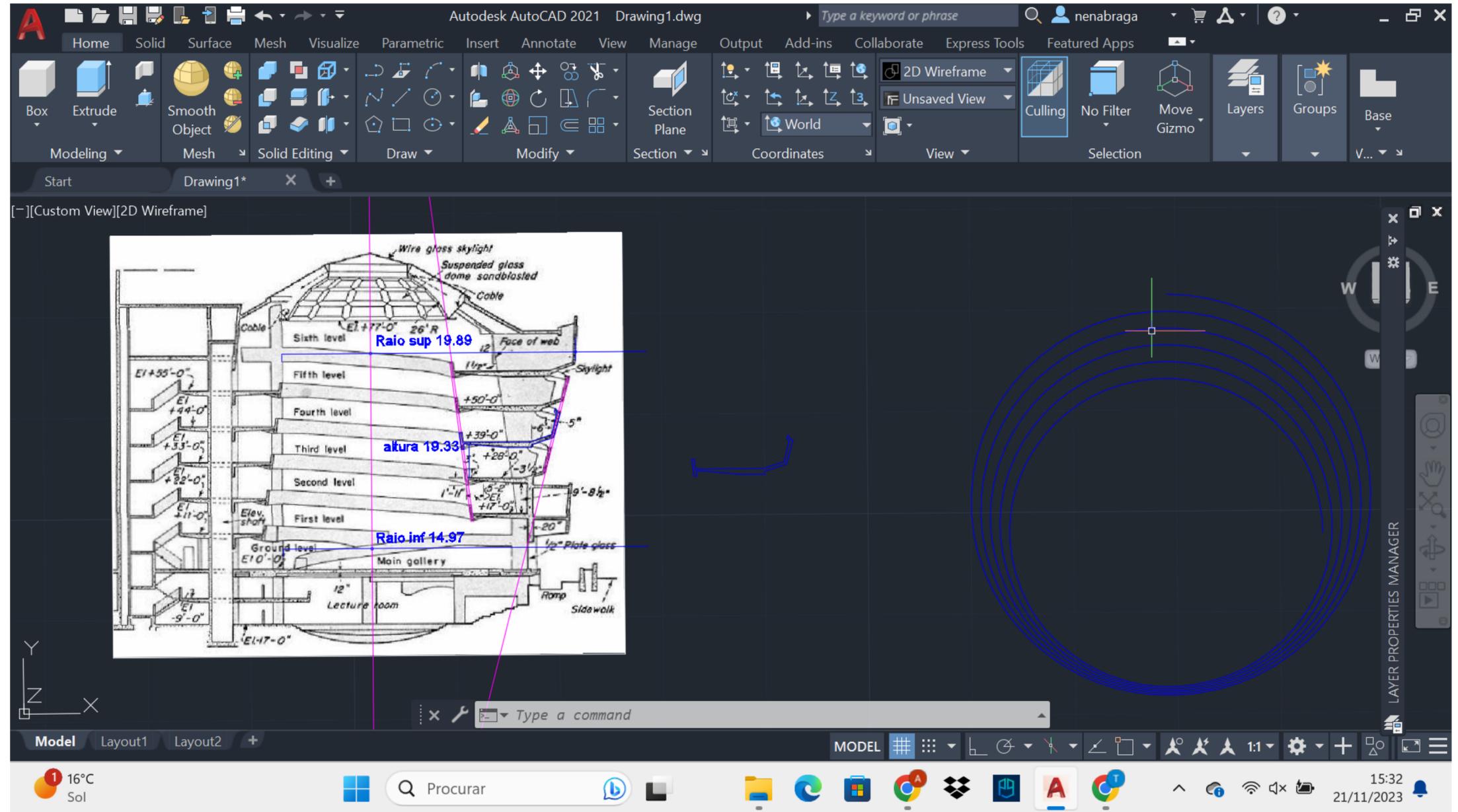
ReDig

9ª semana -17 NOV

Decalque do Guggenheim



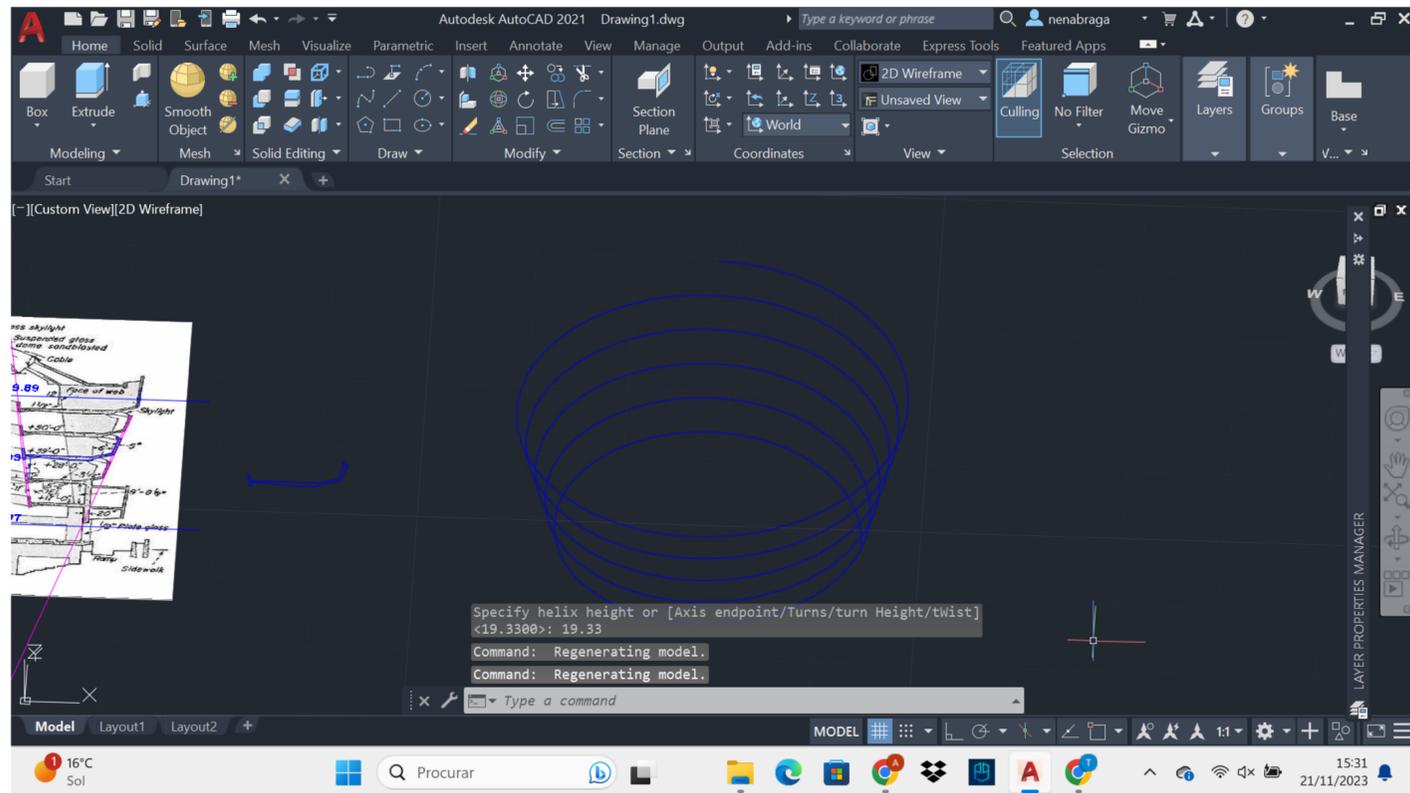
Decalque e interiorização do conceito da estrutura
Linhas da estrutura e identificação das cotas da base e topo da hélice



ReDig

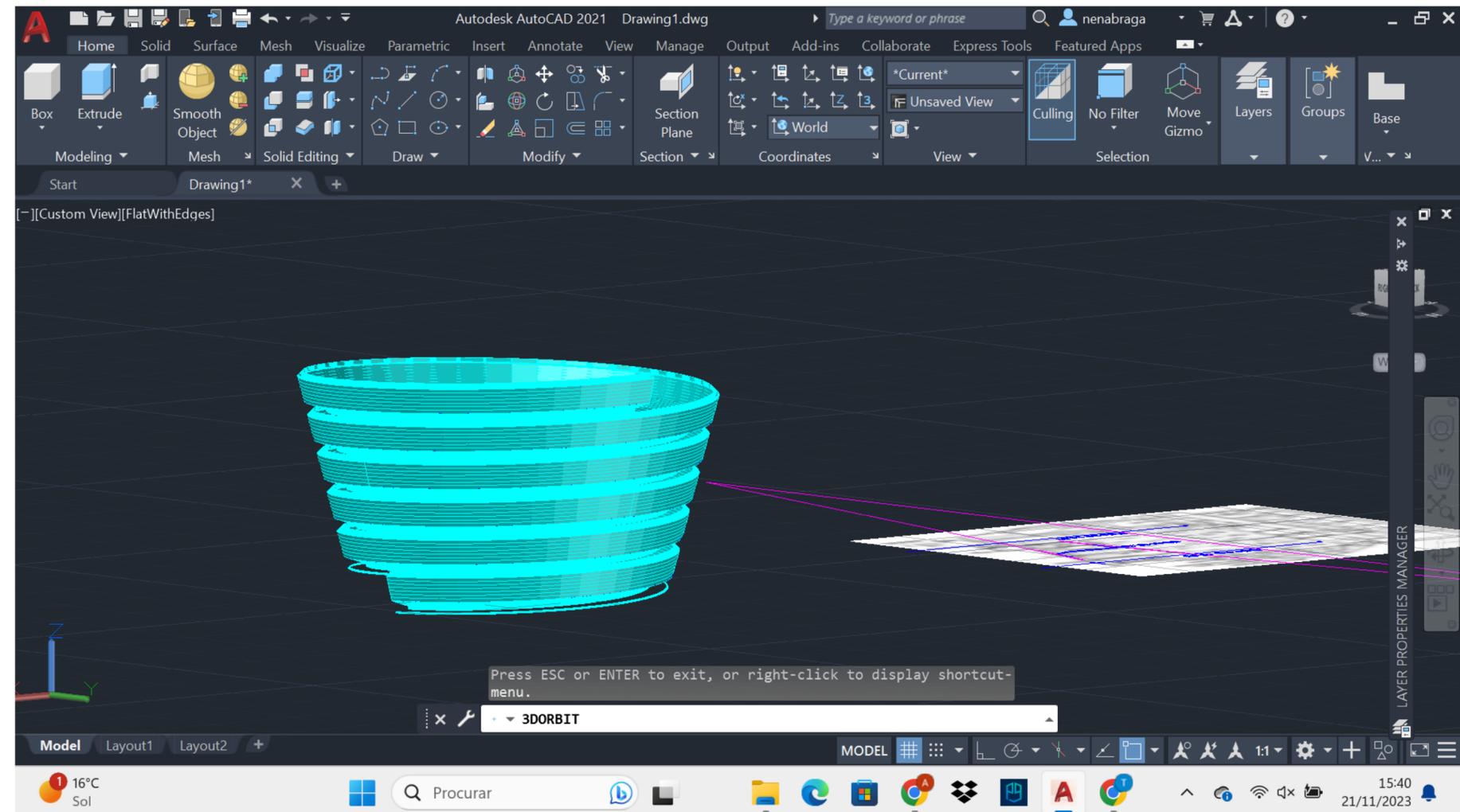
10ª semana –21 NOV

Decalque do Guggenheim



HELIX depois de identificadas as cotas e o nr de voltas

EXTRUDE seguindo a **PATH** construída primeiro. **SHADE** para intensificação visual



ReDig

10^a semana -21 NOV