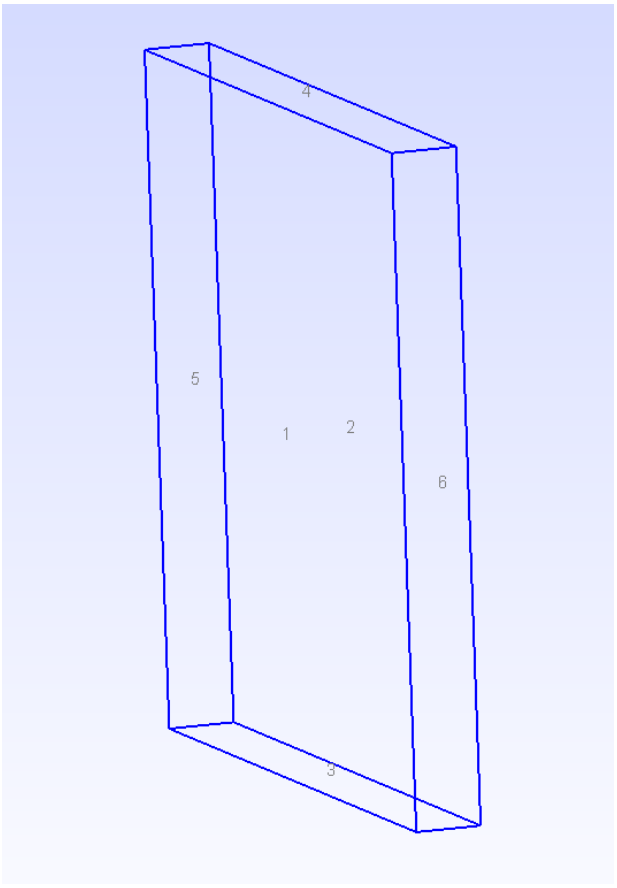
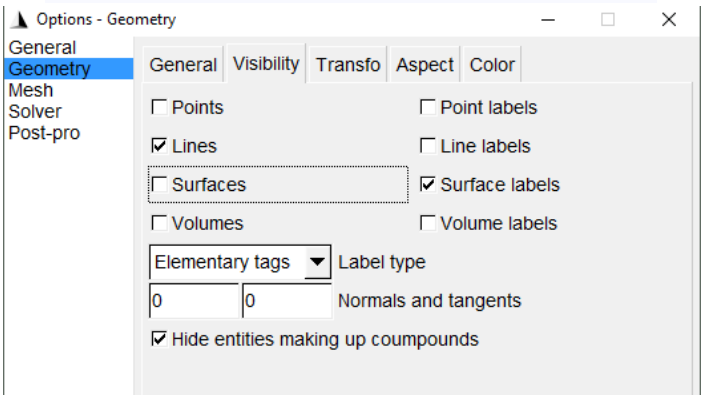
Tutorial de como criar o geo/msh file e checar se os vetores normais estão na direção correta (para fora da superfície) no Gmsh (v 2.13.2).

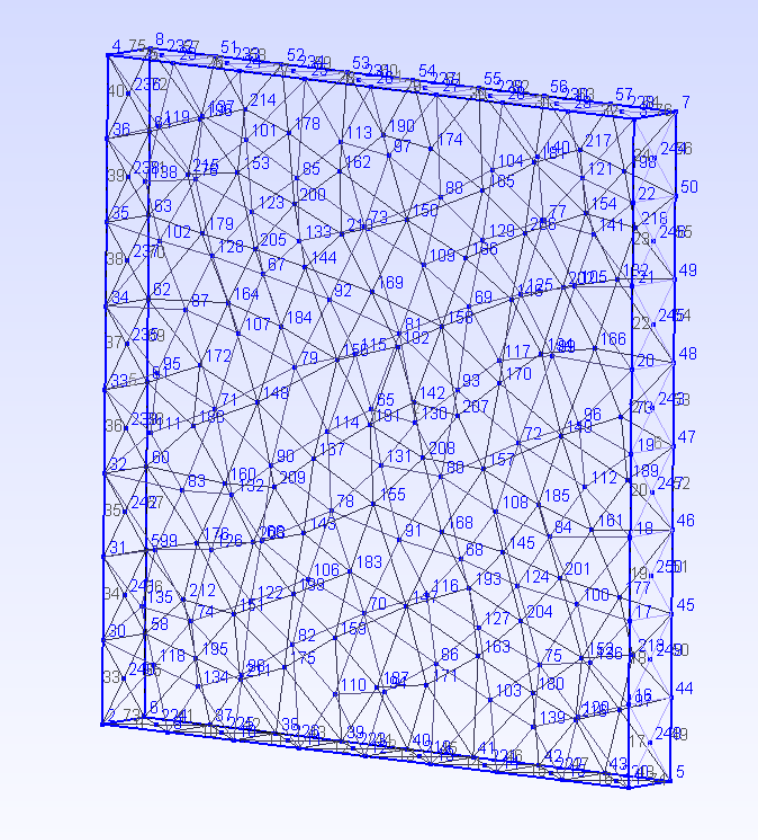
Mansour

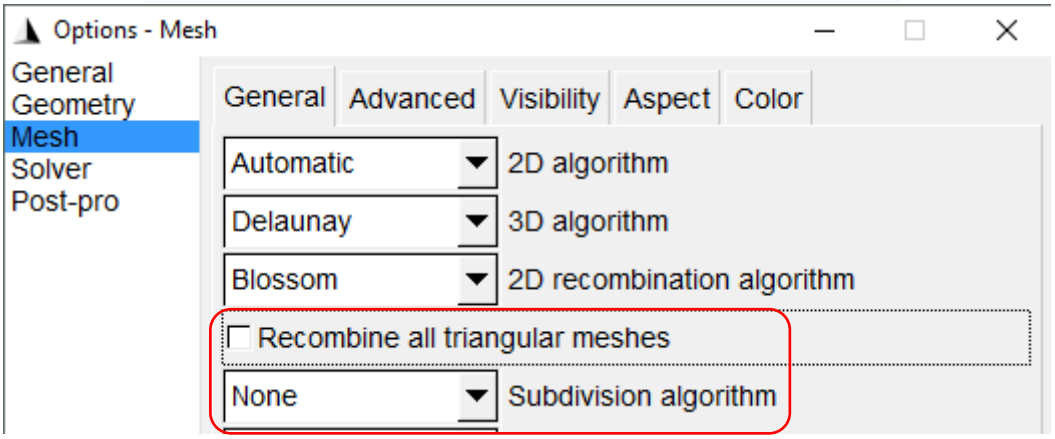
1. Cria figura no FreeCad (v 0.16)
   Create sketch -> ok -> show grid/grid snap -> sketch tools -> pad
   Export .brep
2. Abrir figura gerada no FreeCAD no Gmsh
   Cria .geo selecionando as superfícies:
   Geometry -> physical groups -> add -> surface
3. Checar se os vetores normais
   mostra numeração de cada face:



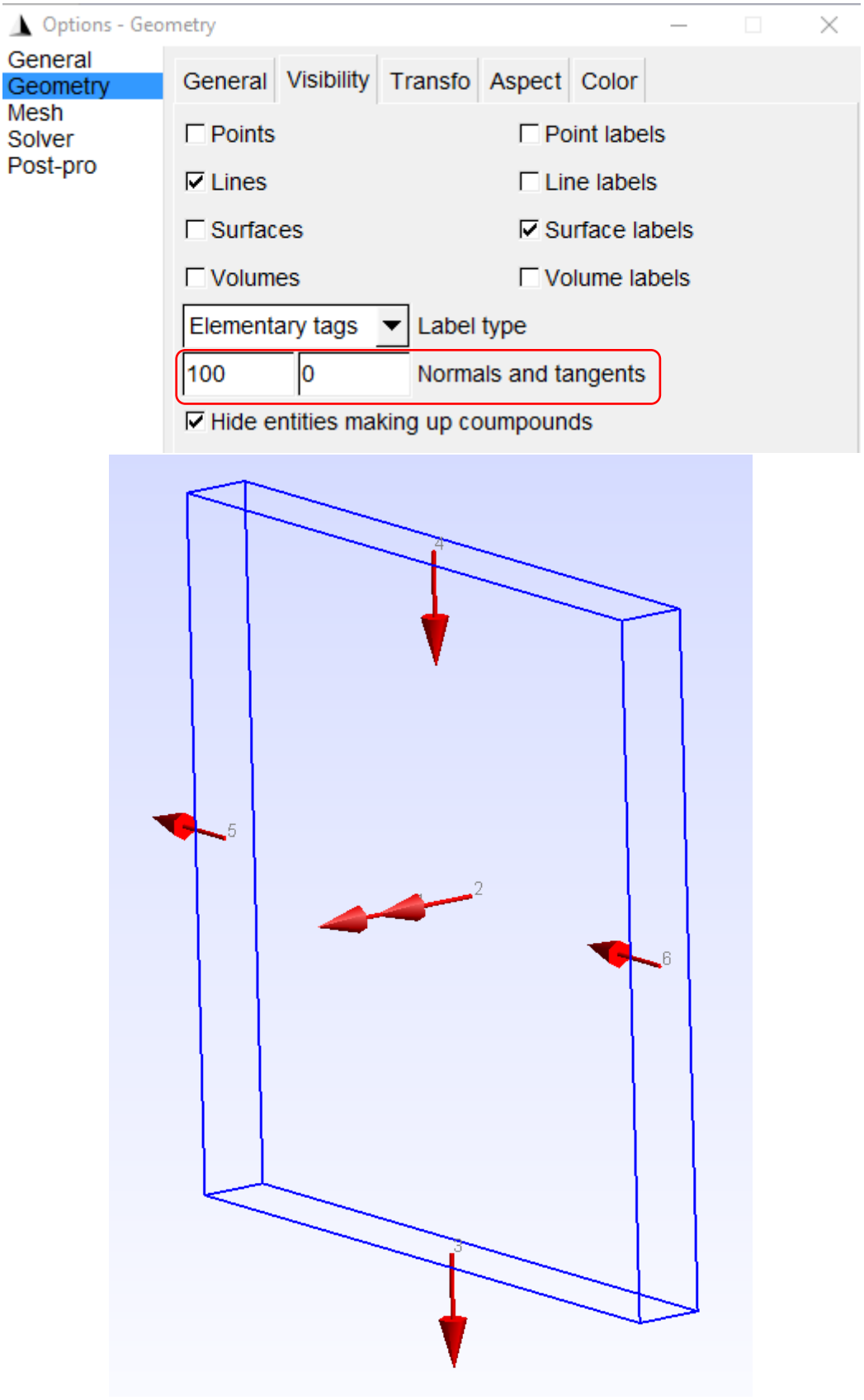


4. Cria o mesh triangular (apertar o Mesh->2D)



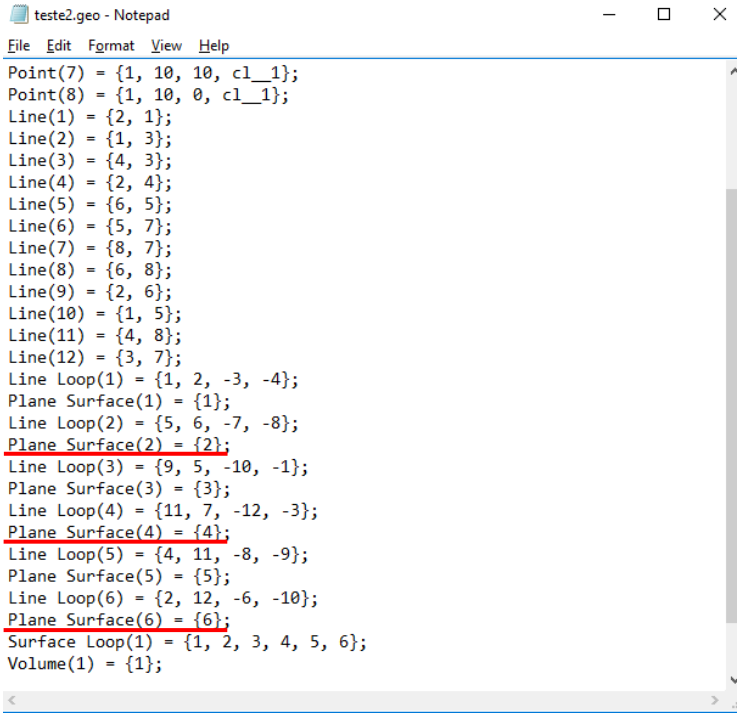


5. Para aparecer o vetor normal:



No caso, as superfícies 2, 4 e 6 estão com o sentido oposto.

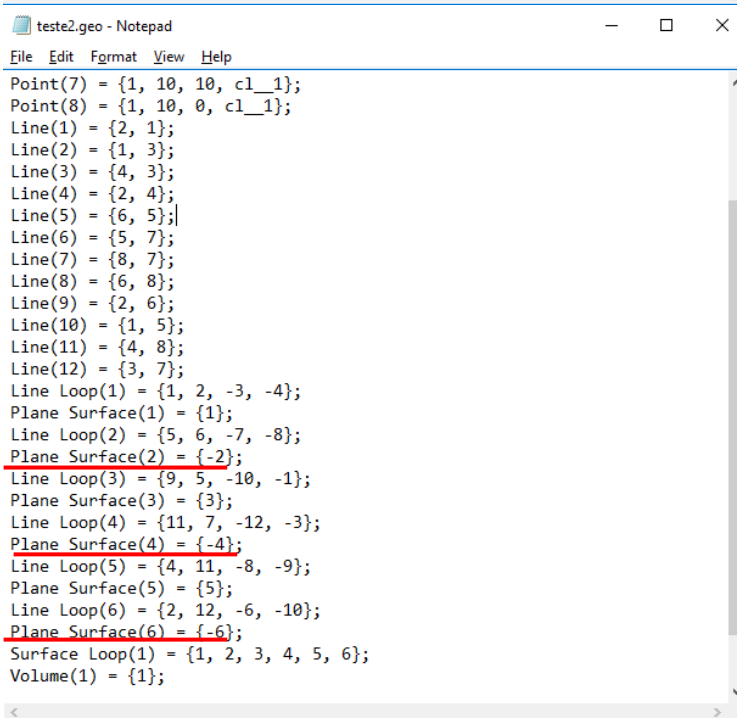
6. Geometry -> edit file
   Inverter Plane Surface 2, 4 e 6.



teste2.geo - Notepad

File Edit Format View Help

```
Point(7) = {1, 10, 10, cl__1};
Point(8) = {1, 10, 0, cl__1};
Line(1) = {2, 1};
Line(2) = {1, 3};
Line(3) = {4, 3};
Line(4) = {2, 4};
Line(5) = {6, 5};
Line(6) = {5, 7};
Line(7) = {8, 7};
Line(8) = {6, 8};
Line(9) = {2, 6};
Line(10) = {1, 5};
Line(11) = {4, 8};
Line(12) = {3, 7};
Line Loop(1) = {1, 2, -3, -4};
Plane Surface(1) = {1};
Line Loop(2) = {5, 6, -7, -8};
Plane Surface(2) = {2};
Line Loop(3) = {9, 5, -10, -1};
Plane Surface(3) = {3};
Line Loop(4) = {11, 7, -12, -3};
Plane Surface(4) = {4};
Line Loop(5) = {4, 11, -8, -9};
Plane Surface(5) = {5};
Line Loop(6) = {2, 12, -6, -10};
Plane Surface(6) = {6};
Surface Loop(1) = {1, 2, 3, 4, 5, 6};
Volume(1) = {1};
```



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Point(8) = {1, 10, 0, cl__1};
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Line(3) = {4, 3};
Line(4) = {2, 4};
Line(5) = {6, 5};
Line(6) = {5, 7};
Line(7) = {8, 7};
Line(8) = {6, 8};
Line(9) = {2, 6};
Line(10) = {1, 5};
Line(11) = {4, 8};
Line(12) = {3, 7};
Line Loop(1) = {1, 2, -3, -4};
Plane Surface(1) = {1};
Line Loop(2) = {5, 6, -7, -8};
Plane Surface(2) = {-2};
Line Loop(3) = {9, 5, -10, -1};
Plane Surface(3) = {3};
Line Loop(4) = {11, 7, -12, -3};
Plane Surface(4) = {-4};
Line Loop(5) = {4, 11, -8, -9};
Plane Surface(5) = {5};
Line Loop(6) = {2, 12, -6, -10};
Plane Surface(6) = {-6};
Surface Loop(1) = {1, 2, 3, 4, 5, 6};
Volume(1) = {1};
```

7. Salva -> reload -> confere sentido -> se ok -> gera novo mesh -> salva mesh