What?

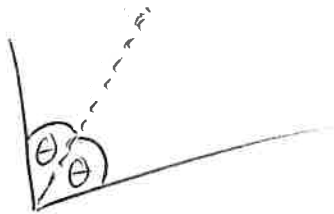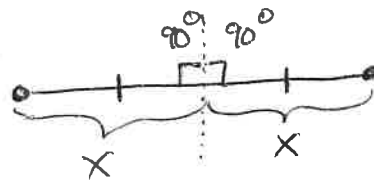| Angle Bisector	Perpendicular Bisector
Locus of points that ...	Locus of points that ...

What!

Angle Bisector

Cuts an angle in half

Locus of points that ...

are equidistant
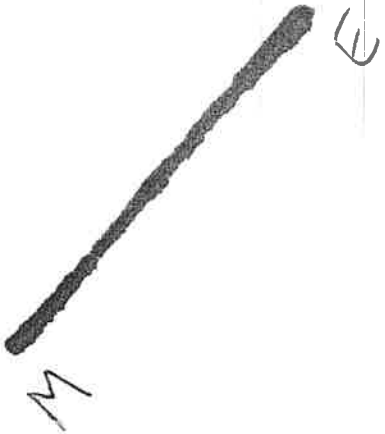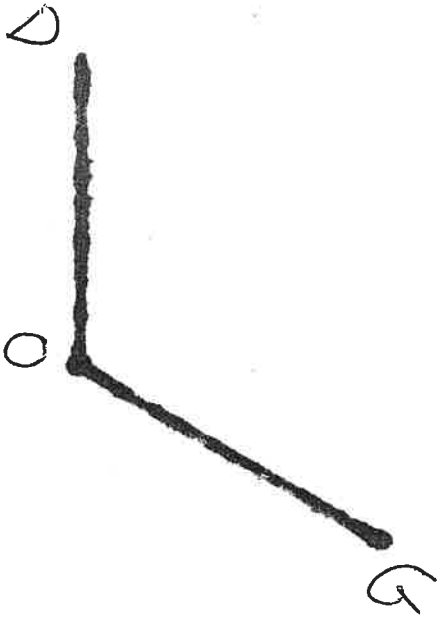from 2 lines

Perpendicular Bisector

cuts a segment in half
creates 2 90° angles

Locus of points that ...
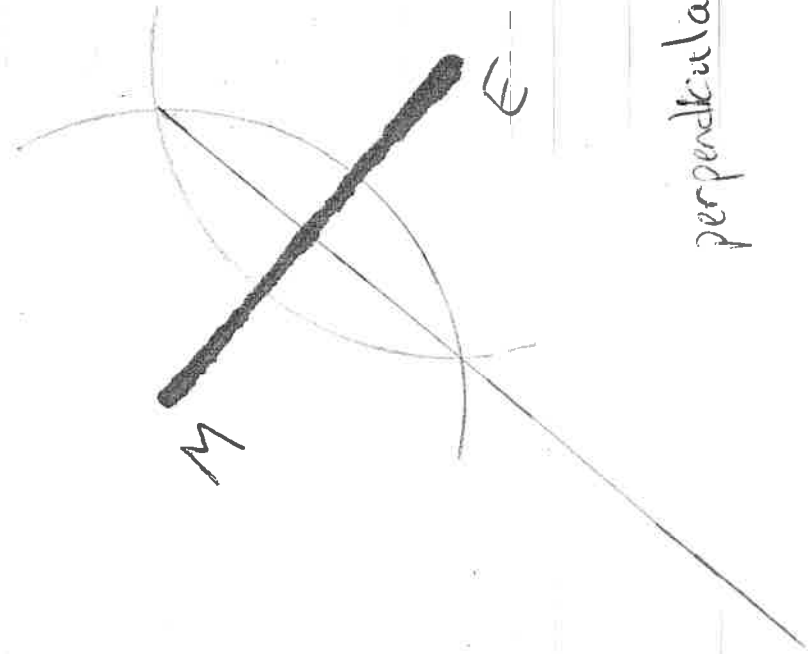
are equidistant
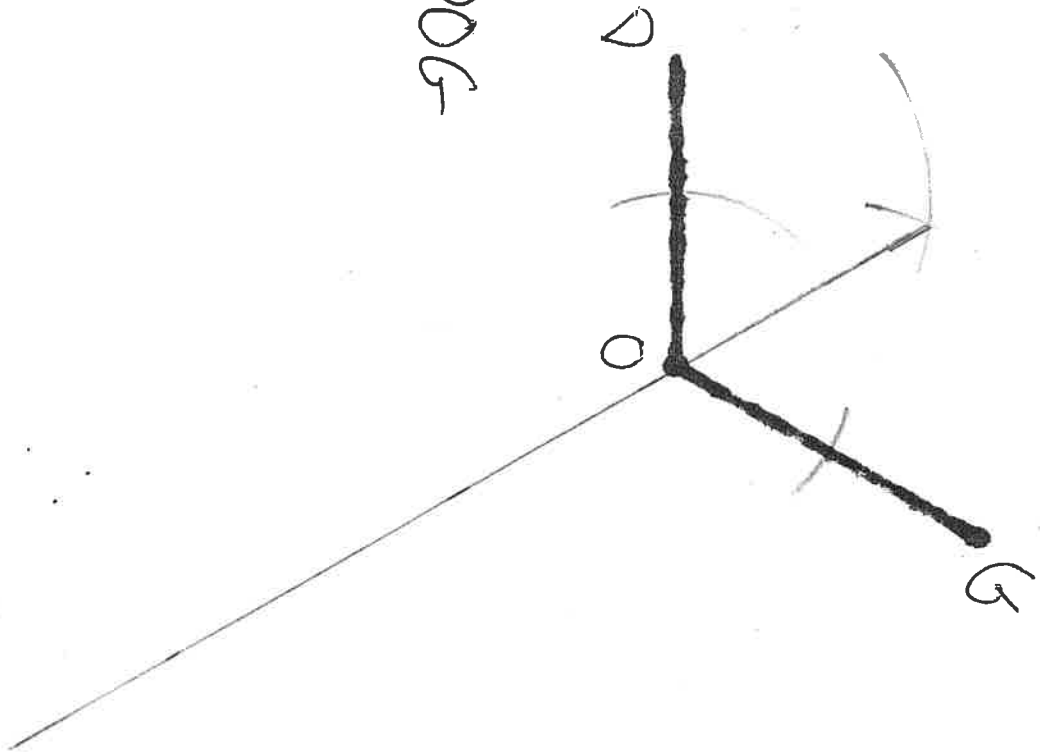from 2 points

HOW?

Bisect angle DOG

D
O
G

perpendicularly bisect segment ME

M
E

HOW?

Bisect angle DOG

D

O

G

perpendicularly bisect segment ME

M

E

EXPLORE

1. Draw a triangle below the line

2. Bisect all of the angles

What do you notice?
What do you wonder?

3. Bisect all of the sides
   perpendicularly

What do you notice?
What do you wonder?

pro tip: do 1., 2., and 3. in different colors

Why?

Why did this happen?
Will it always happen? Prove it!
Does the type of triangle matter?
(Acute, obtuse, right ... scalene, isosceles, equilateral)
Why or why not?
Does a proof exist without cases?

EXPLORE

1. Draw a triangle to the right

2. Bisect ALL of the angles

3. ⊥ Bisect ALL of the sides

4. What do you notice?

5. What do you wonder?

I notice the intersection of all angle bisectors is a single point. And the intersection of the 3 ⊥ bisectors is a different point.

I wonder if this will always happen.
I wonder why this happened.

pro tip: do 1,2, and 3 in different colors