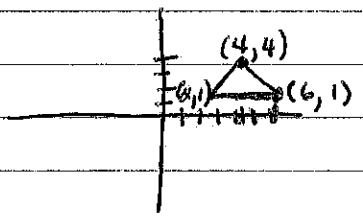
10.1 Math 10 AW - notes

Translations - moving left or right and up or down.
P(x, y)

move **left** → **subtract** from x value
move **right** → **add** to x value.

move down → **subtract** from y value
move up → **add** to y value

ex



Points → (2,1); (6,1); (4,4)

Translate - up 2 and left 3

Point 1 → (2, 1) ⇒ (2 **-3**, 1 **+2**)

new point = (-1, 3)

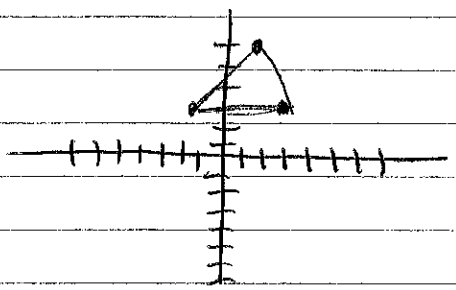
Point 2 → (6, 1) ⇒ (6 - 3, 1 + 2)

new point = (3, 3)

Point 3 → (4, 4) ⇒ (4 - 3, 4 + 2)

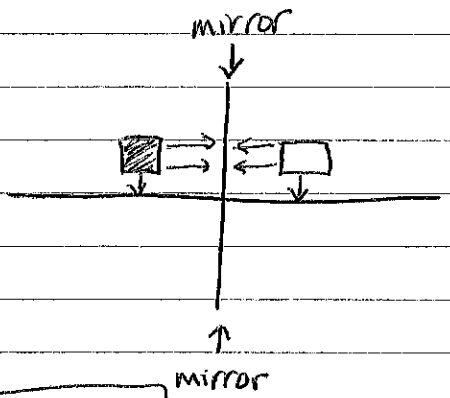
new point = (1, 6)

now draw:



10.2 Math 10AW - notes

Reflections - like a mirror is placed between original & new



* same distance from mirror & other lines.

* Tip if you fold your paper on the line of reflection - you will see where the new drawing should be!

10.3 Rotations - turning an object around a point.

CW = clockwise ↻
CCW = counter clockwise ↺

* use a clear plastic sheet to practice rotating & find the patterns.

10.4 Math 10AW - notes

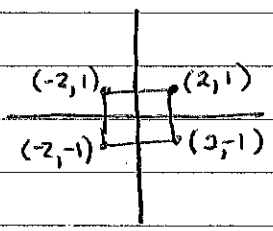
Dilations - a fixed point from where a shape is enlarged or reduced

From origin (0,0)

To find the new points - use the vertices (corners)

1. list the vertices.
2. enlarge or reduce both x & y point by multiplying by given scale.
3. plot new points.

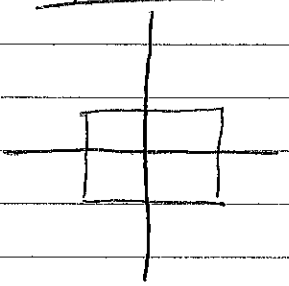
ex



dialate x 2

(2,1) = (4,2)
(2,-1) = (4,-2)
(-2,1) = (-4,2)
(-2,-1) = (-4,-2)

Draw



Note * if not around origin you have to figure out how far from given point - then multiply

10.5 Combining Transformation

* just do one step at a time
  1. do transformation
  2. draw
  3. do next transformation
  4. draw
  ⋮