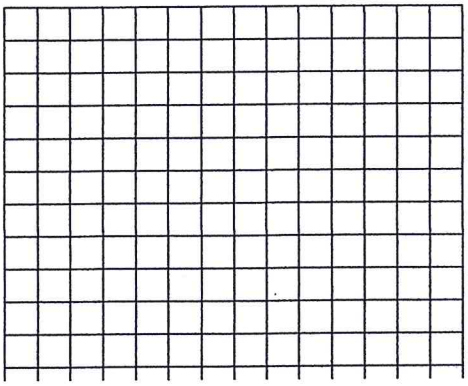
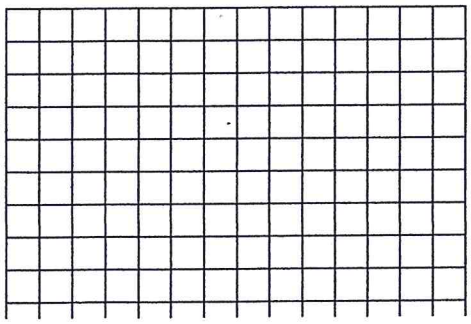
Non-rigid transformations

1) Graph trapezoid ZOID with Z(-3,-2), O(3,-2), I(2,1), and D(-2,1). Use the transformation (x,y) → (2x, y) to graph Z'O'I'D'. Describe the difference

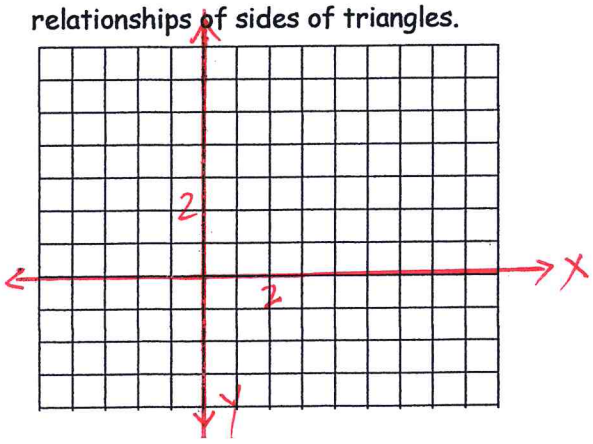


2) Now graph ZOID again. Use the transformation (x,y) → (2x, 2y) to graph Z'O'I'D'. Describe the difference between the figures. Measure side lengths in cm. Trace over angles from ZOID to see if they are congruent to angles from Z'O'I'D'.

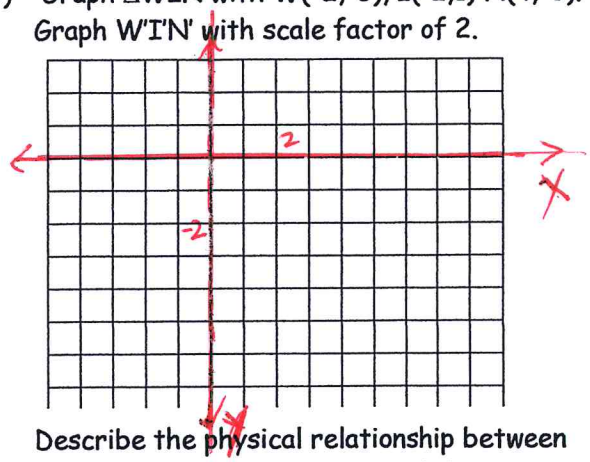


The corresponding angles of the two figures are _____. The corresponding sides of ZOID and Z'O'I'D' have _____ ratio (are proportional).

3) Graph F(4,2) below. Then graph F' with rule (1.5x, 1.5y). Measure distances from (0,0). Describe. Then graph BL with B(2,4) and L(6,-2). Dilate with rule (.5x, .5y) to get B'L'. Connect the endpoints of the two segments back to (0,0) with dashed segments. Describe relationships of sides of triangles.

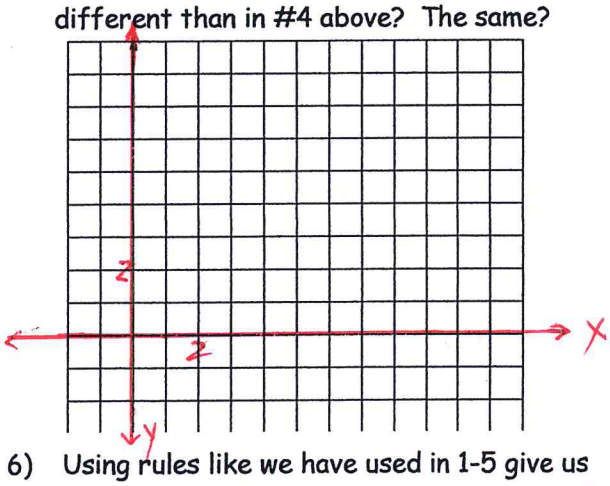
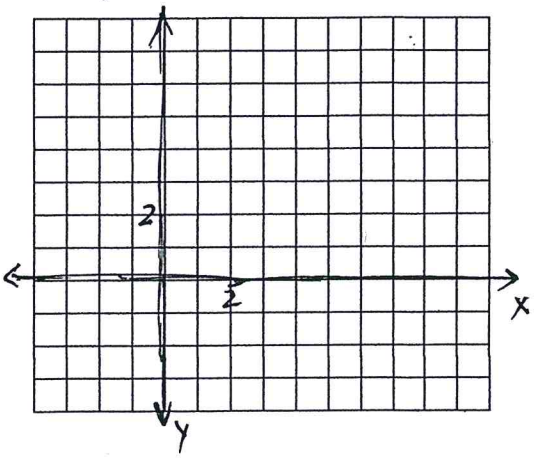


4) Graph ΔWIN with W(-2,-3), I(-2,1) N(4,-3). Graph W'I'N' with scale factor of 2.



Describe the physical relationship between corresponding sides in terms of slopes.

5) Now graph ΔBUL with B(0,0), U(0,4) and L(6,0). What transformation would map WIN exactly onto BUL? Graph ΔB'U'L' with scale factor of two. How are the physical relationships between corresponding sides different than in #4 above? The same?



6) Using rules like we have used in 1-5 give us dilations centered at the origin. Graph ΔFTB with F(1,-1), T(2,2) B(5,-1). Then graph ΔF'T'B' with F'(0,1), T'(2,7), and B'(8,1) The scale factor of FTB to F'T'B' looks like: Play with ruler and discuss with partner to see if you can find the center of the dilation.