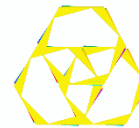




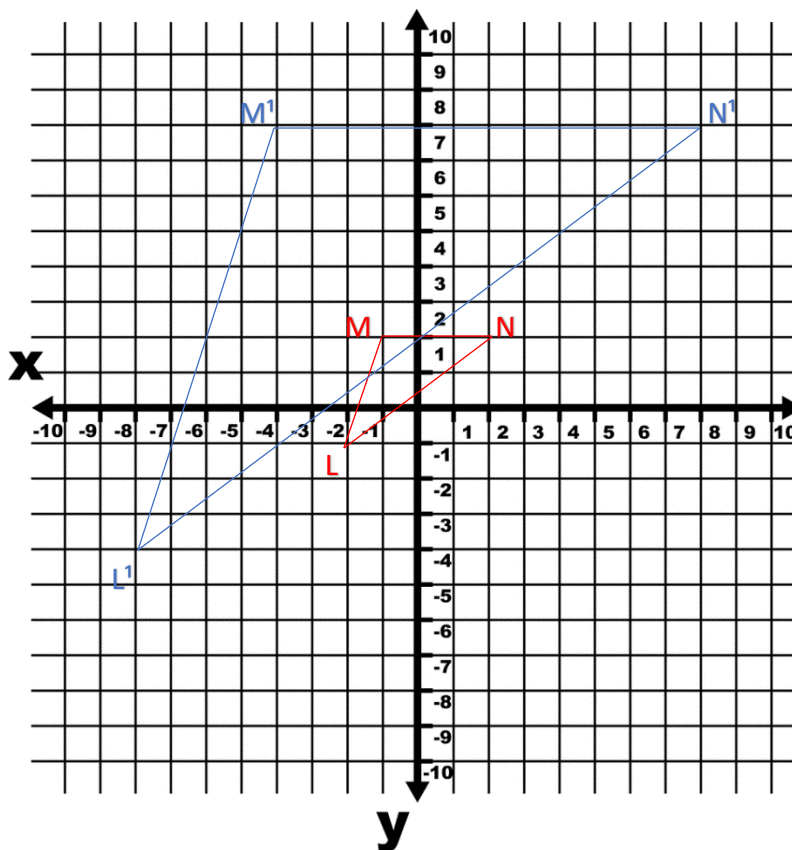
## Grade 9 - Mathematics

### Transformation Geometry 5



### Memo

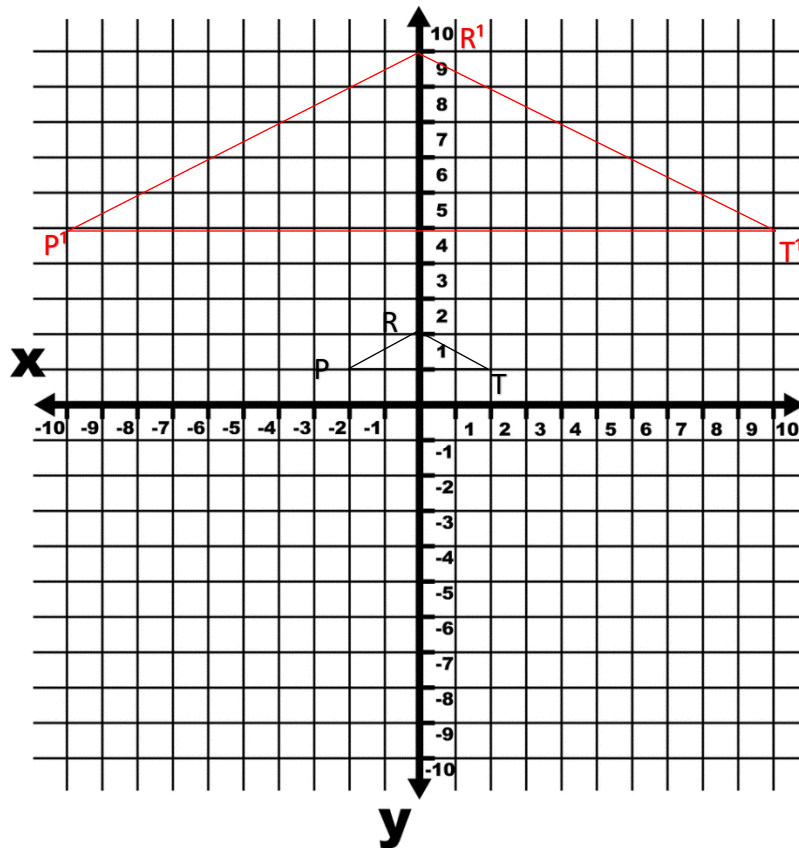
- The vertices of  $\triangle LMN$  are  $L(-2; -1)$ ,  $M(-1, 2)$  and  $N(2; 2)$ 
  - Plot  $\triangle LMN$ .



- $\triangle LMN$  is enlarged through the point of origin by a scale factor of 4 to give  $\triangle L^1M^1N^1$ . Calculate the co-ordinates of the vertices of  $\triangle L^1M^1N^1$ .  
 $L(-8; -4)$ ,  $M(-4; 8)$ ,  $N(8; 8)$
- Plot and label the image.
- Without calculating the lengths of any sides, give the value of  $\frac{\text{The perimeter of } \triangle L^1M^1N^1}{\text{The perimeter of } \triangle LMN} = k = 4$



2. On the cartesian plane below,  $\Delta PRT$  has been plotted.



- Record the vertices in  $\Delta PRT$ .  
 $P(-2; 1), R(0; 2), T(2; 1)$
- $\Delta PRT$  is enlarged through the point of origin by a scale factor of 5, to give the image  $\Delta P'R'T'$ . Record the new co-ordinates for the image.  
 $P'(-10; 5), R'(0; 10), T'(10; 5)$
- Plot  $\Delta P'R'T'$ .
- Are these triangles congruent or similar? Give a reason.

**They are similar.**

$\Delta PRT \sim \Delta P'R'T'$  because  $\frac{P'R'}{PT} = \frac{20}{4} = 5$  so  $k = 5$