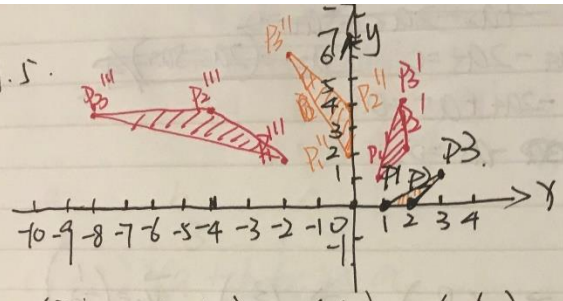
7A.5.



a. $AP_1 = \begin{pmatrix} 1 & -1 \\ 1 & 1 \end{pmatrix} \times \begin{pmatrix} 1 \\ 0 \end{pmatrix} = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$

$AP_2 = \begin{pmatrix} 1 & -1 \\ 1 & 1 \end{pmatrix} \times \begin{pmatrix} 2 \\ 0 \end{pmatrix} = \begin{pmatrix} 2 \\ 2 \end{pmatrix}$

$AP_3 = \begin{pmatrix} 1 & -1 \\ 1 & 1 \end{pmatrix} \times \begin{pmatrix} 3 \\ 1 \end{pmatrix} = \begin{pmatrix} 2 \\ 4 \end{pmatrix}$

~~c. Firstly, the triangle has a rotation 45° about (1,1), and an enlar~~

b. $AP_1' = \begin{pmatrix} 1 & -1 \\ 1 & 1 \end{pmatrix} \times \begin{pmatrix} 1 \\ 1 \end{pmatrix} = \begin{pmatrix} 0 \\ 2 \end{pmatrix}$

$AP_2' = \begin{pmatrix} 1 & -1 \\ 1 & 1 \end{pmatrix} \times \begin{pmatrix} 2 \\ 2 \end{pmatrix} = \begin{pmatrix} 0 \\ 4 \end{pmatrix}$

$AP_3' = \begin{pmatrix} 1 & -1 \\ 1 & 1 \end{pmatrix} \times \begin{pmatrix} 2 \\ 4 \end{pmatrix} = \begin{pmatrix} -2 \\ 6 \end{pmatrix}$

$AP_1'' = \begin{pmatrix} 1 & -1 \\ 1 & 1 \end{pmatrix} \times \begin{pmatrix} 0 \\ 2 \end{pmatrix} = \begin{pmatrix} -2 \\ 2 \end{pmatrix}$

$AP_2'' = \begin{pmatrix} 1 & -1 \\ 1 & 1 \end{pmatrix} \times \begin{pmatrix} 0 \\ 4 \end{pmatrix} = \begin{pmatrix} -4 \\ 4 \end{pmatrix}$

$AP_3'' = \begin{pmatrix} 1 & -1 \\ 1 & 1 \end{pmatrix} \times \begin{pmatrix} -2 \\ 6 \end{pmatrix} = \begin{pmatrix} -8 \\ 4 \end{pmatrix}$

c. The triangle has a rotation about 135° and an enlargement of $\frac{1}{\sqrt{2}}$, and it firstly translations 2 units upwards, and then 3 units to the left.