

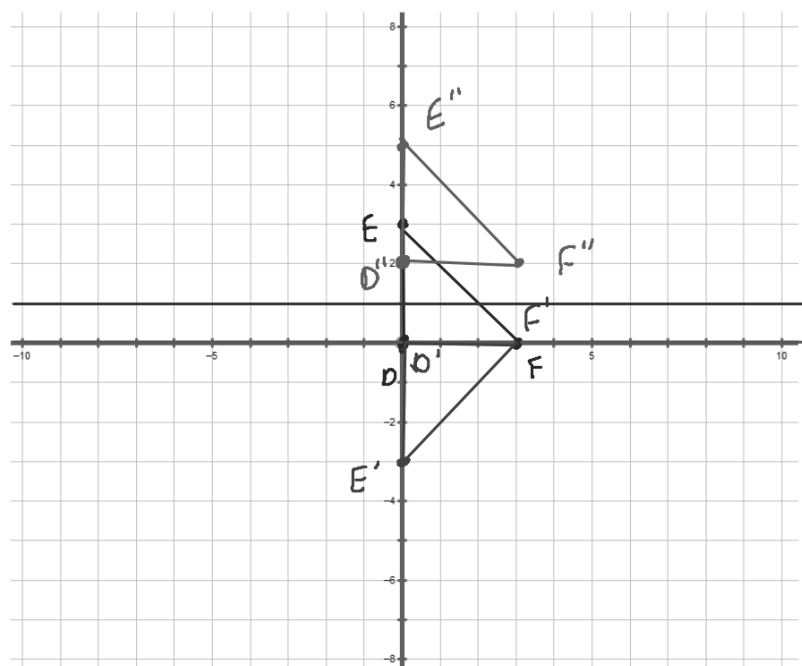
4. Suppose  $n$  is the line with equation  $y = 1$ . Given  $\triangle DEF$  with vertices  $D(0, 0)$ ,  $E(0, 3)$ , and  $F(3, 0)$ , what translation image is equivalent to  $(R_n \circ R_{x\text{-axis}})(\triangle DEF)$ ?

$$D'(0, 0) \quad D''(0, 2)$$

$$E'(0, -3) \quad E''(0, 5)$$

$$F'(3, 0) \quad F''(3, 2)$$

$$T_{\langle 0, 2 \rangle} \quad (x, y) \rightarrow (x, y+2)$$



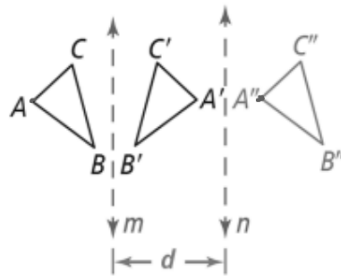
A translation is a composition of reflections across two parallel lines.

- Both reflection lines are perpendicular to the line containing a preimage point and its corresponding image point.
- The distance between the preimage and the image is twice the distance between the two reflection lines.

PROOF: SEE EXAMPLE 5.

If...  $T(ABC) = A''B''C''$

$$AA'' = BB'' = CC'' = 2d$$



Then...  $(R_n \circ R_m)(ABC) = A''B''C''$