Student's name .....

1. (10 points) Find the point that divides the segment

$\overline{(0, 3)(3, 0)}$ in the ratio $\alpha=2$.

2. (25 points) On the line $(-2, 0) + [(3, 1)]$ find a point, which is equidistant from the points (2, 2) and (4, 0).

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3. (25 points) Do the same for the same line and points (5, -1) and (3, 5). How would you explain the substantial difference between the two problems?

4. (15 poits) Find the reflection of the point (8, 0) in the line (-2, 0) + [(3, 1)].

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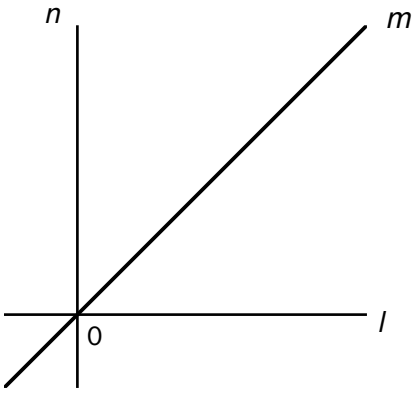
5. (25 points)



The equation of the line l is $y = 0$, the equation of the line m is $y = x$. and the equation of the line n is $x = 0$.

The product of these reflections is itself a reflection: $\Omega_l \ \Omega_m \ \Omega_n \ = \Omega_k$.

Why?

Use the representation theorem to find the line k.