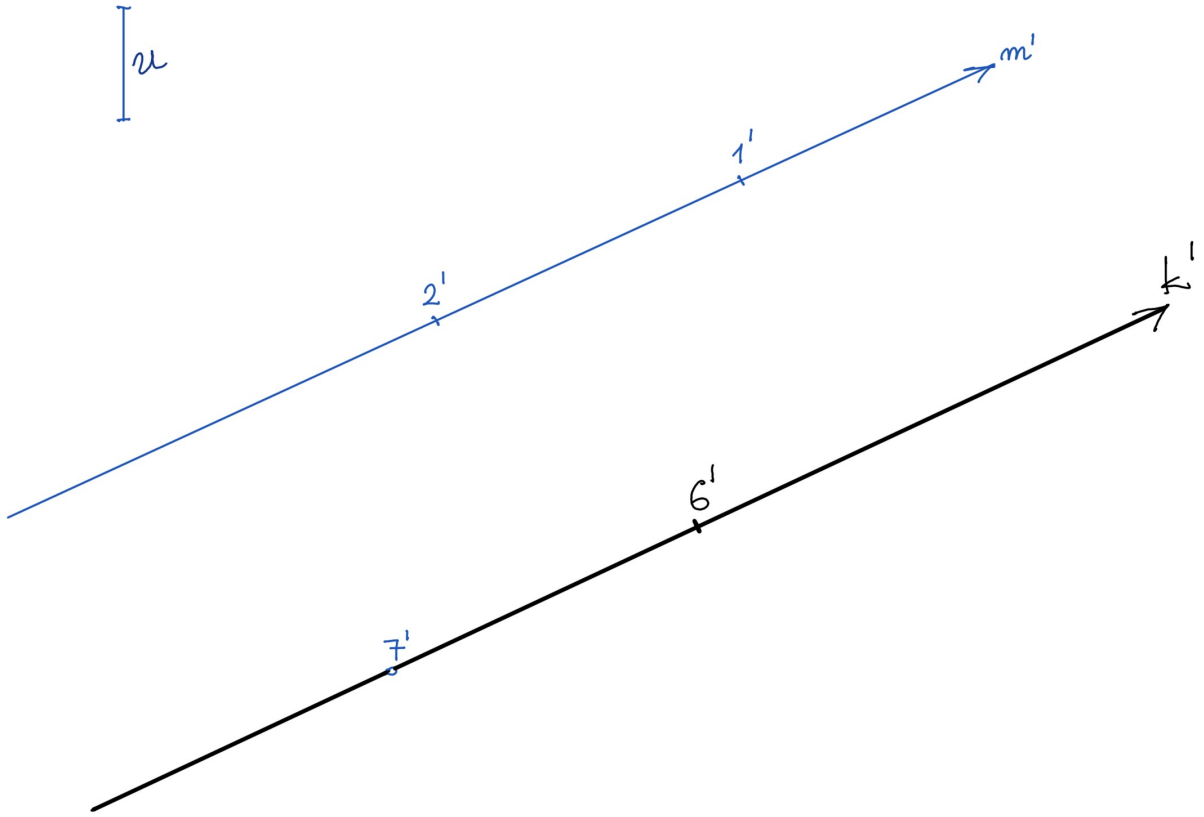
MAP PROJECTION – CONT'D

Lecture 7
21 Nov 2022

1. Parallel Lines



Given:
$m(1,2)$, $7 \notin m$

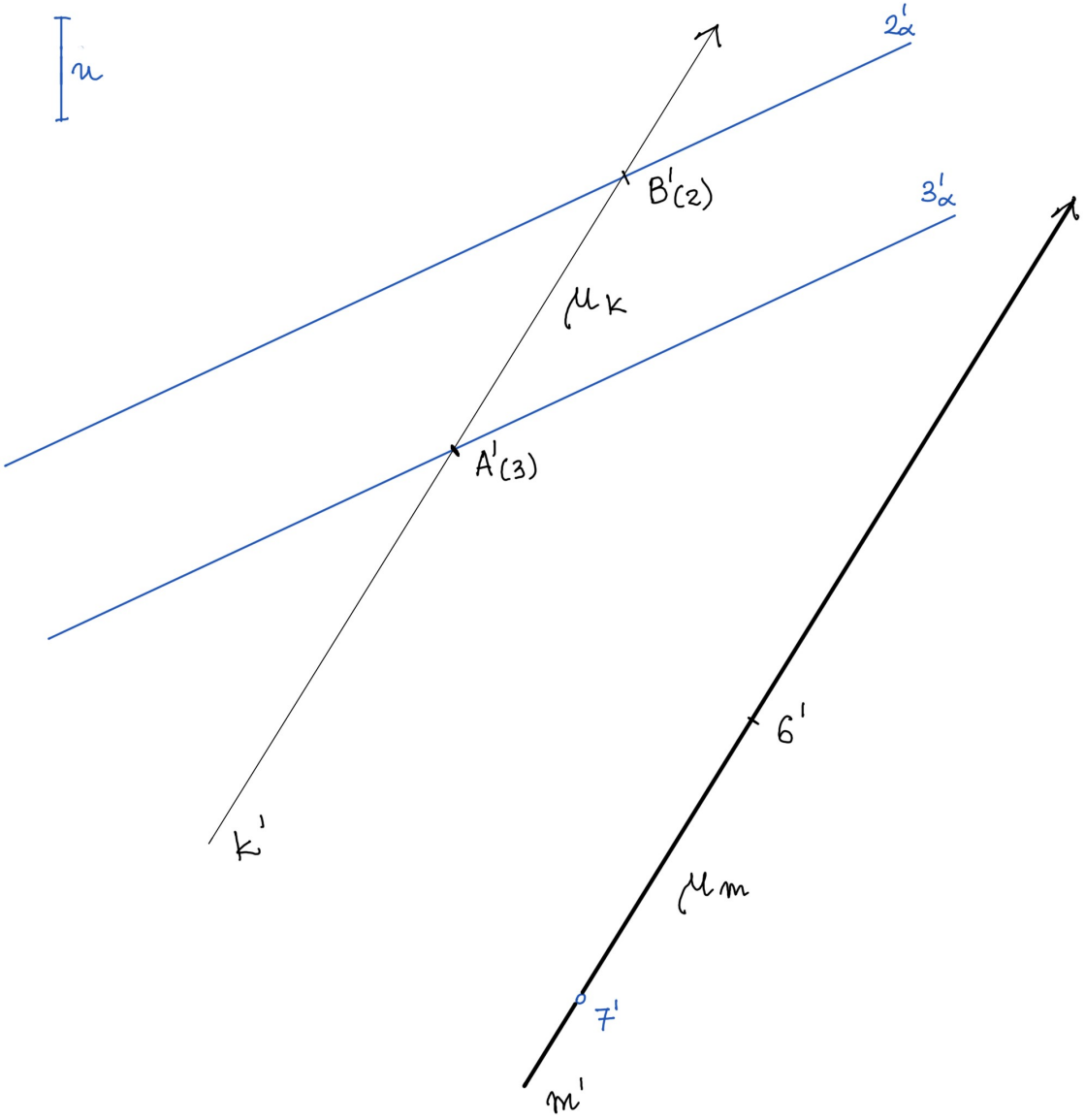
Problem:
Find $k \parallel m$, $7 \in k$.

Solution:
$k \parallel m \Leftrightarrow$ 1) $k' \parallel m'$,

2) $\mu_k = \mu_m$,

3) k and m have the same fall.

2. Line parallel to the plane



Given:

$\alpha(2\alpha, 3\alpha)$, $7 \not\asymp \alpha$

Problem:

Find $m \parallel \alpha$, $7 \asymp m$

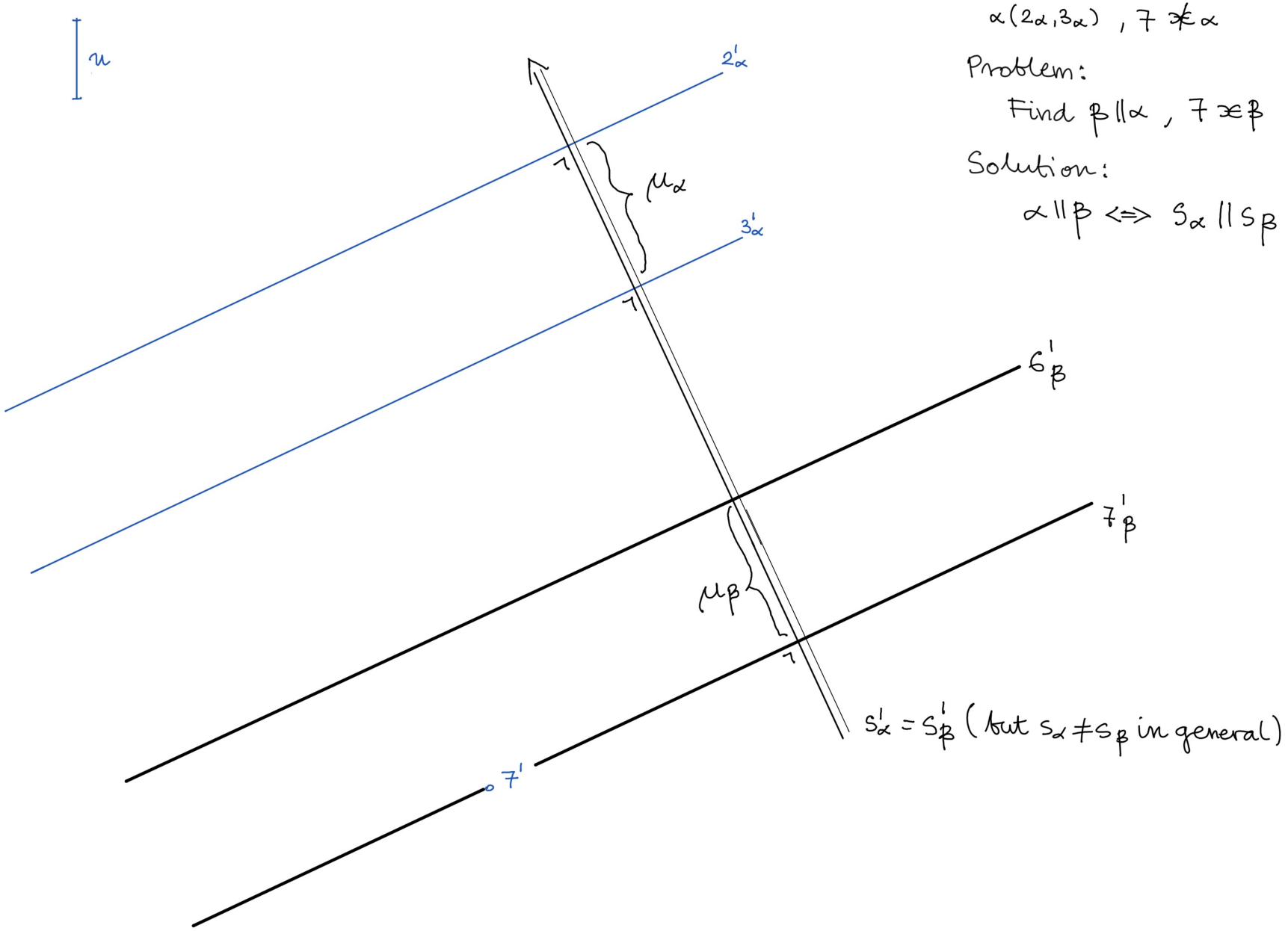
Solution:

$$m \parallel \alpha \Leftrightarrow \exists\, k \asymp \alpha : m \parallel k$$

$k(A,B)$, $A \asymp 3\alpha$, $B \asymp 2\alpha$

$\mu_m = \mu_k$

3. Parallel planes



Given:

$\alpha(2_\alpha, 3_\alpha)$, $7 \not\in \alpha$

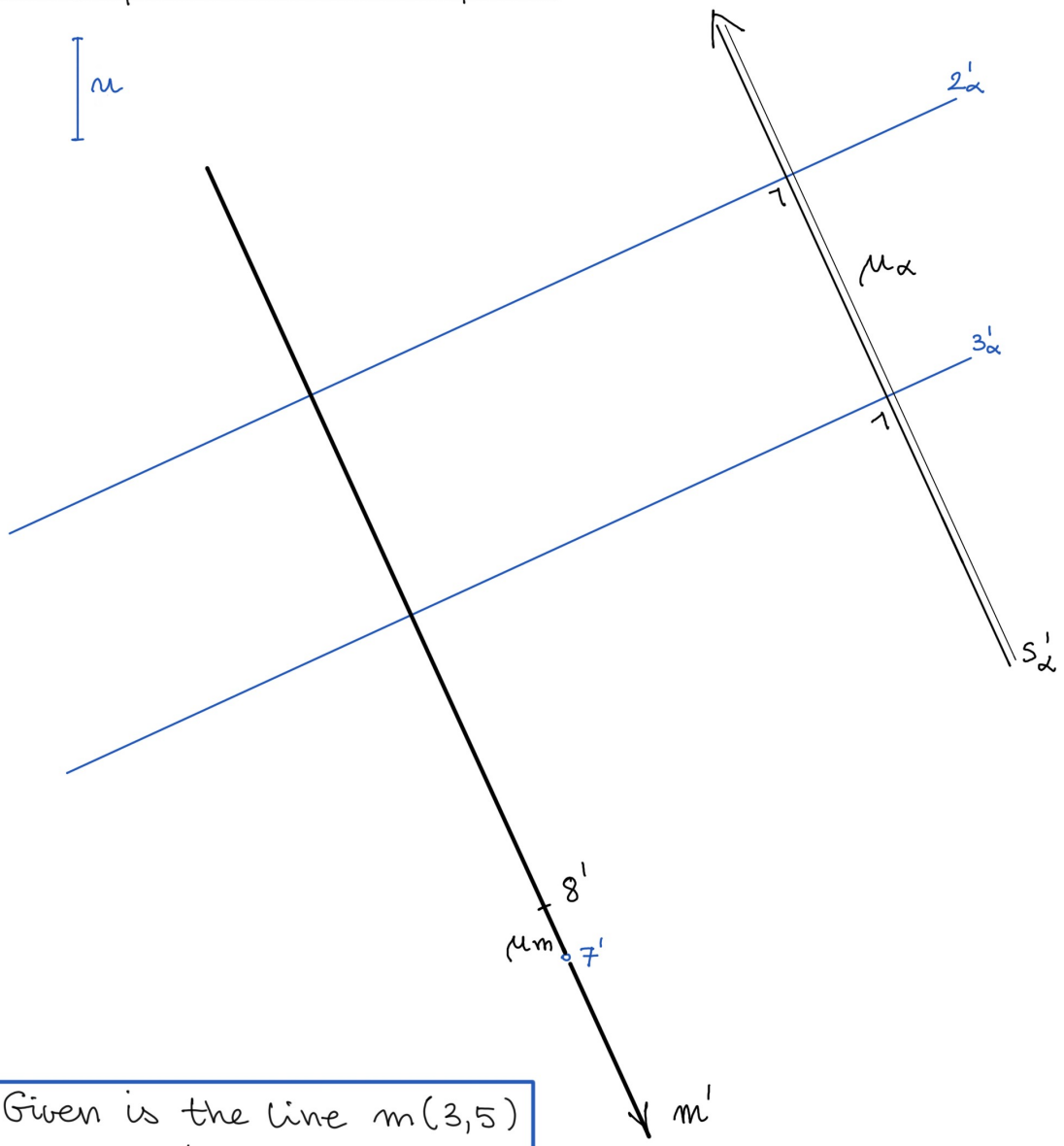
Problem:

Find $\beta \parallel \alpha$, $7 \in \beta$

Solution:

$\alpha \parallel \beta \Leftrightarrow S_\alpha \parallel S_\beta$

4. Line perpendicular to the plane



Given:

$\alpha(2\alpha, 3\alpha)$, $7 \not\in \alpha$

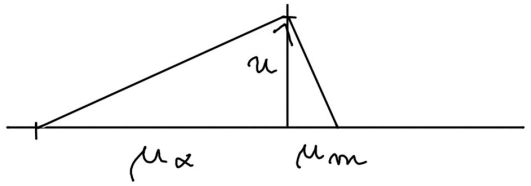
Problem:

Find $m \perp \alpha$, $7 \in m$

Solution:

$m \perp \alpha \Leftrightarrow$ 1) $m' \perp$ level lines of α
or, equivalently,
$m' \parallel s'_\alpha$

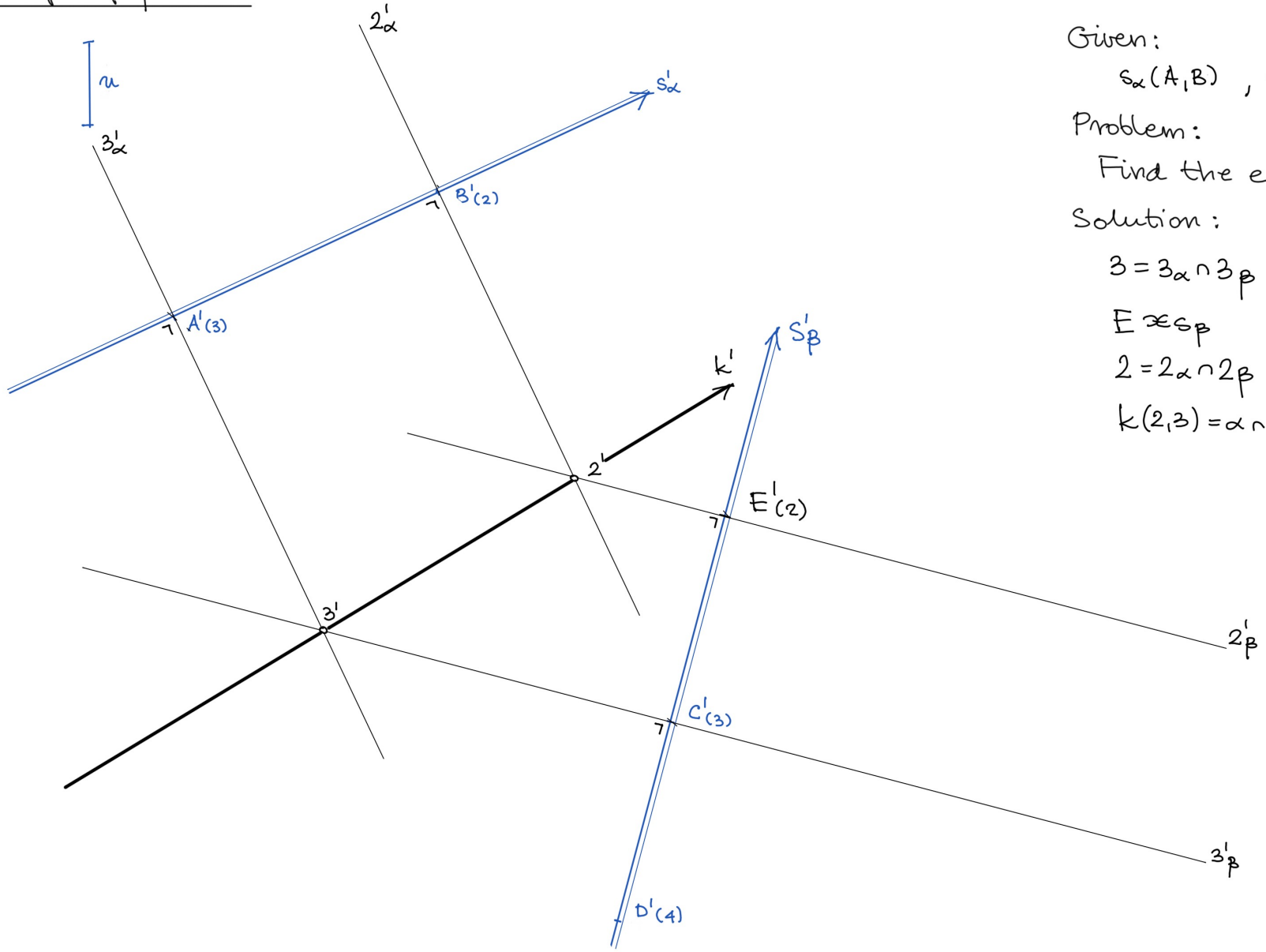
2) $\mu_\alpha \cdot \mu_m = u$



3) fall of m is opposite to the fall of α

2. Given is the line $m(3,5)$ and $7 \not\in m$.
Find $k \perp m$, $7 \in k$.

5. Edge of planes



Given:

$S_\alpha(A,B)$, $S_\beta(C,D)$

Problem:

Find the edge of α and β.

Solution:

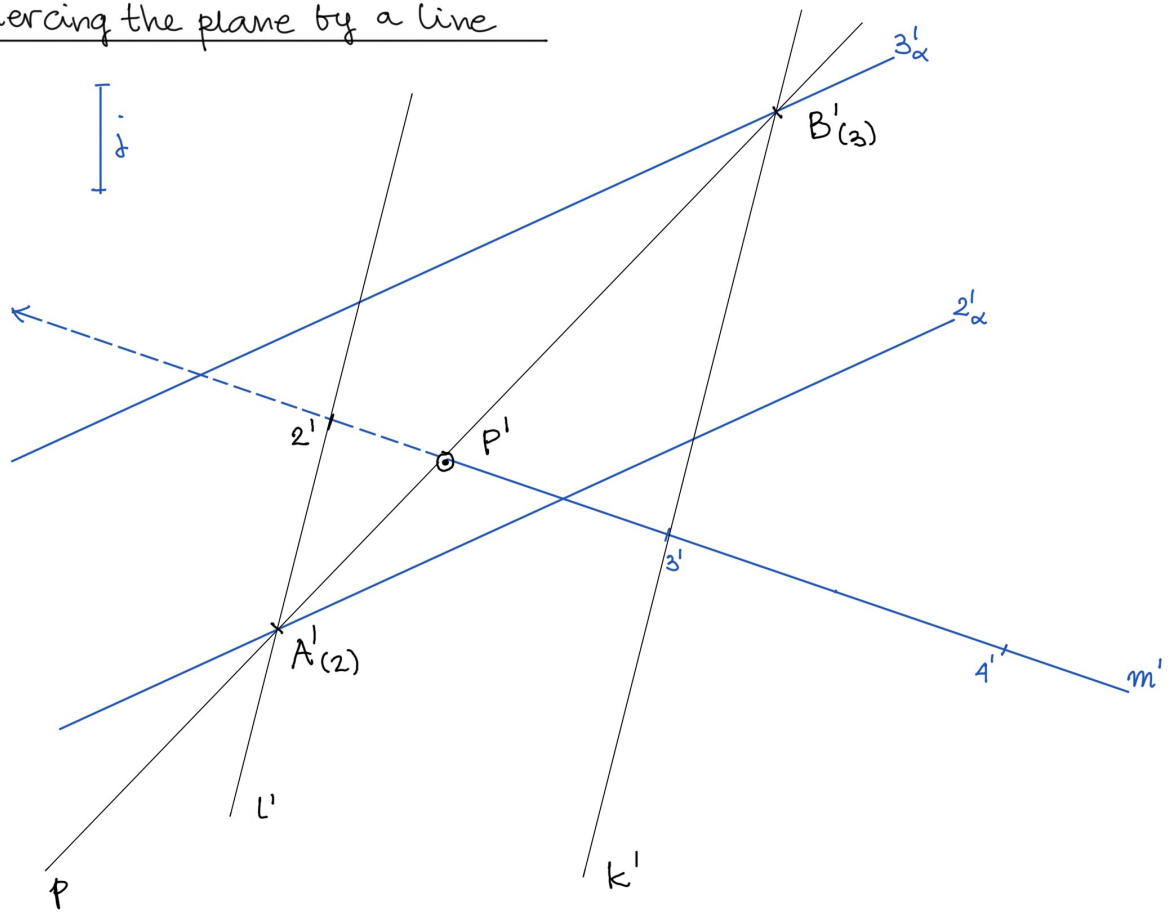
$3 = 3_\alpha \cap 3_\beta$

$E \in S_\beta$

$2 = 2_\alpha \cap 2_\beta$

$k(2,3) = \alpha \cap \beta$

6. Piercing the plane by a line



Given:

$\alpha(2_\alpha, 3_\alpha)$, $m \not\asymp \alpha$

Problem:

Find the piercing of α by m.

Solution:

- Let $A \asymp 2_\alpha$
- $l(A,2)$
- Let $\beta(l,m)$
- Let $k \asymp \beta$, $k \parallel l$
- $B = k \cap 3_\alpha$
- $p(A,B) \asymp \alpha$
- $p(A,B) \asymp \beta$
- $P = p \cap m$

? Find the characteristics of point P.