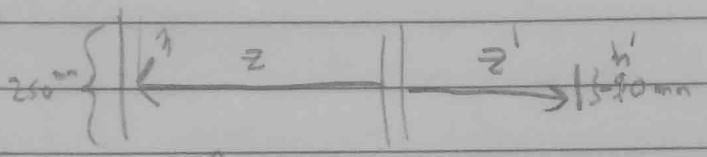
3.2. A 50 mm focal length thin lens is used to image a 250 x 250 mm object onto a 10x10 mm detector. What is the overall object-to-image distance?

Exactly:

$$m = \frac{-10}{250} = -0.04$$

$\Delta = z' - z$



$z = f_F(1 - \frac{1}{m}) = -f(1 - \frac{1}{m}) = 50(\frac{1}{-0.04} - 1) = -1300 \text{ mm}$

$z' = f_R(1 - m) = f(1 - m) = 50(1 + 0.04) = 52 \text{ mm}$

$\boxed{\Delta = z' - z = 1352 \text{ mm}}$