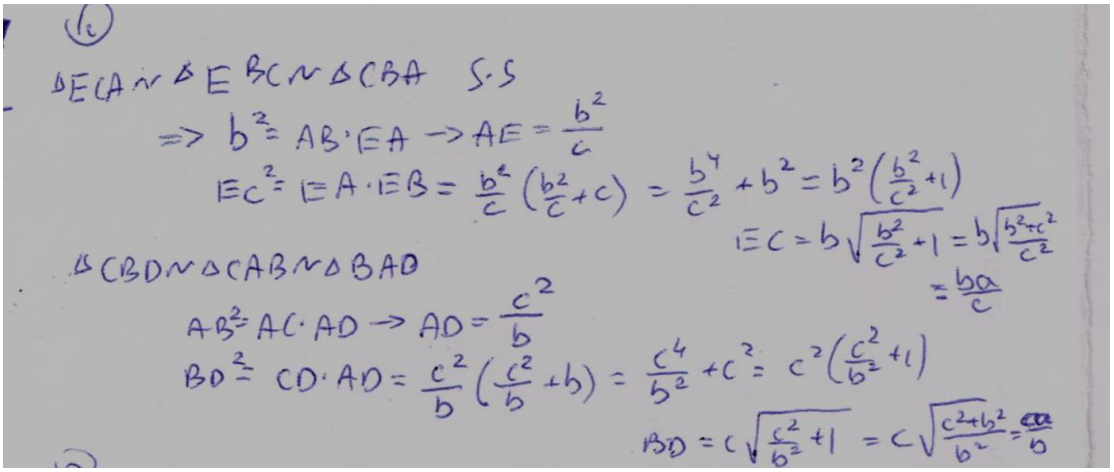
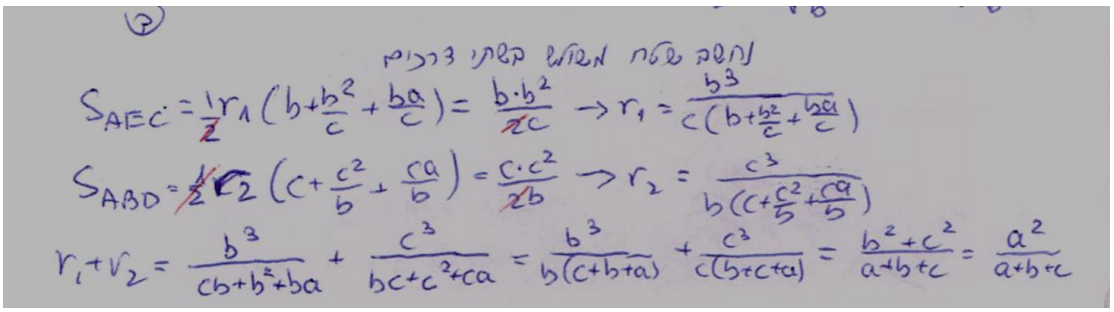

(ב)
△ECA ~ △EBC ~ △CBA S·S
$\Rightarrow b^2 = AB\cdot EA \to AE = \frac{b^2}{c}$
$EC^2 = EA\cdot EB = \frac{b^2}{c}\left(\frac{b^2}{c}+c\right) = \frac{b^4}{c^2}+b^2 = b^2\left(\frac{b^2}{c^2}+1\right)$
$EC = b\sqrt{\frac{b^2}{c^2}+1} = b\sqrt{\frac{b^2+c^2}{c^2}}$
$= \frac{ba}{c}$
△CBD ~ △CAB ~ △BAD
$AB^2 = AC\cdot AD \to AD = \frac{c^2}{b}$
$BD^2 = CD\cdot AD = \frac{c^2}{b}\left(\frac{c^2}{b}+b\right) = \frac{c^4}{b^2}+c^2 = c^2\left(\frac{c^2}{b^2}+1\right)$
$BD = c\sqrt{\frac{c^2}{b^2}+1} = c\sqrt{\frac{c^2+b^2}{b^2}} = \frac{ca}{b}$


(ג)
נחשב שטחים משולשים קטנים גדולים
$S_{AEC} = \frac{1}{2}r_1\left(b+\frac{b^2}{c}+\frac{ba}{c}\right) = \frac{b\cdot b^2}{2c} \to r_1 = \frac{b^3}{c\left(b+\frac{b^2}{c}+\frac{ba}{c}\right)}$
$S_{ABD} = \frac{1}{2}r_2\left(c+\frac{c^2}{b}+\frac{ca}{b}\right) = \frac{c\cdot c^2}{2b} \to r_2 = \frac{c^3}{b\left(c+\frac{c^2}{b}+\frac{ca}{b}\right)}$
$r_1+r_2 = \frac{b^3}{cb+b^2+ba}+\frac{c^3}{bc+c^2+ca} = \frac{b^3}{b(c+b+a)}+\frac{c^3}{c(b+c+a)} = \frac{b^2+c^2}{a+b+c} = \frac{a^2}{a+b+c}$