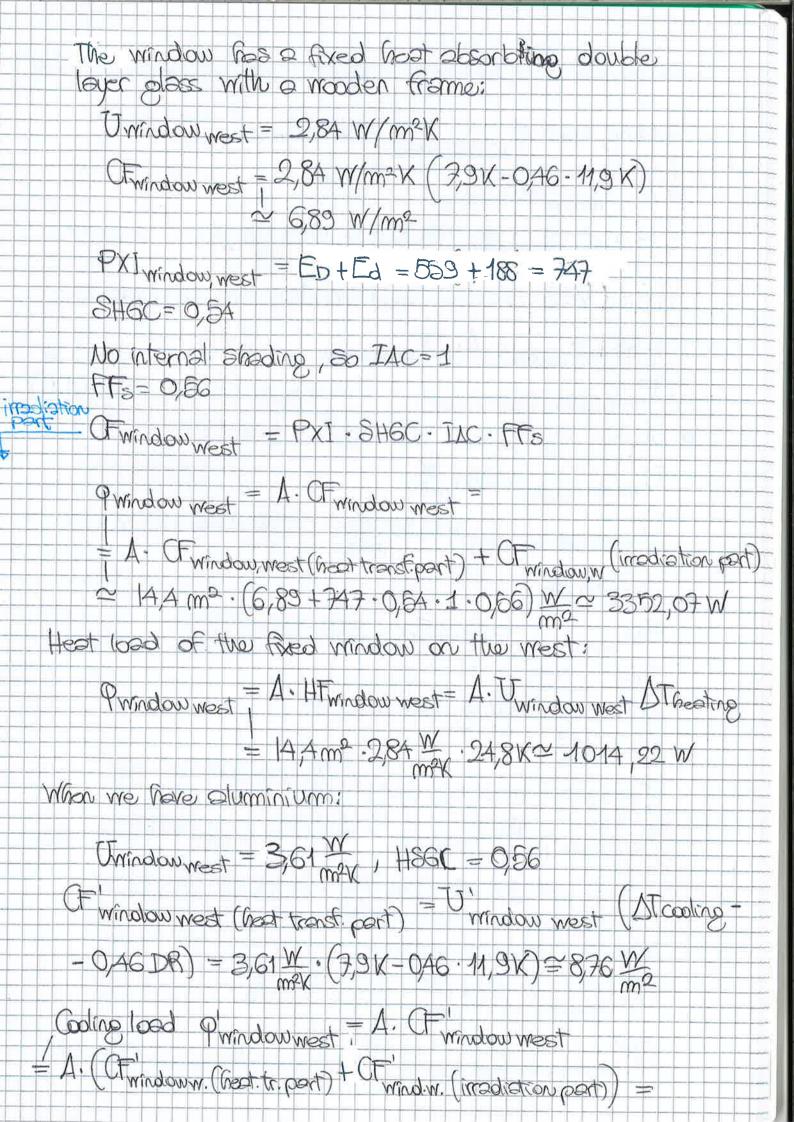
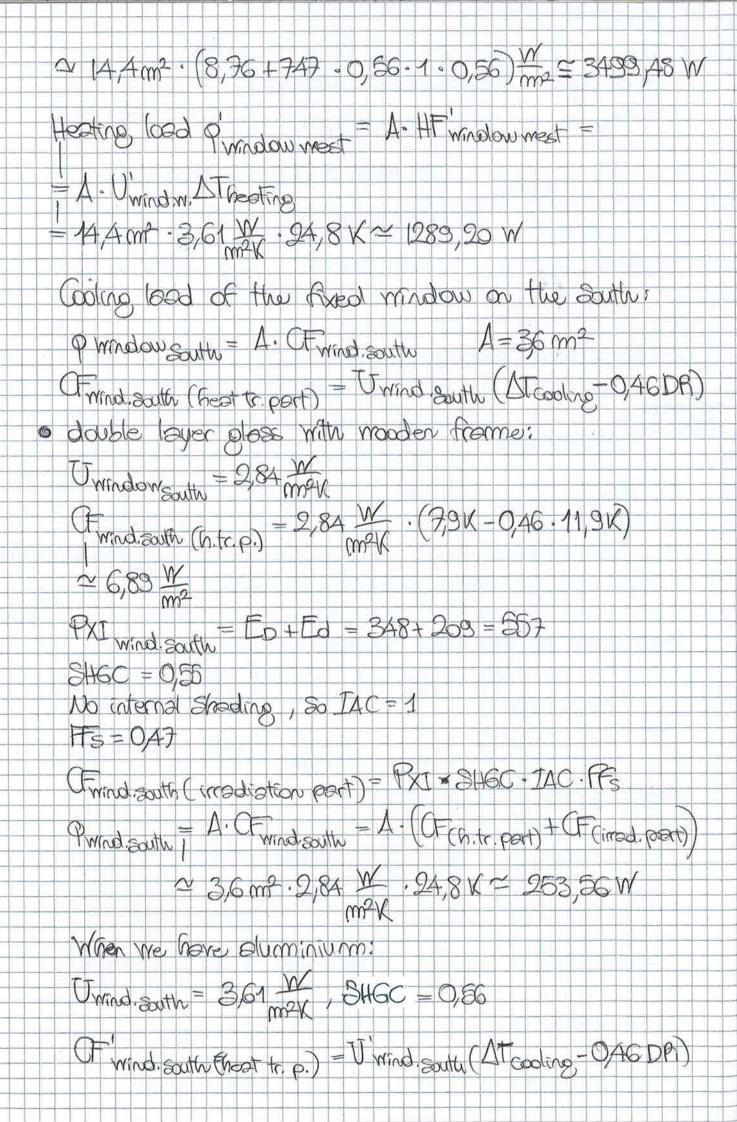
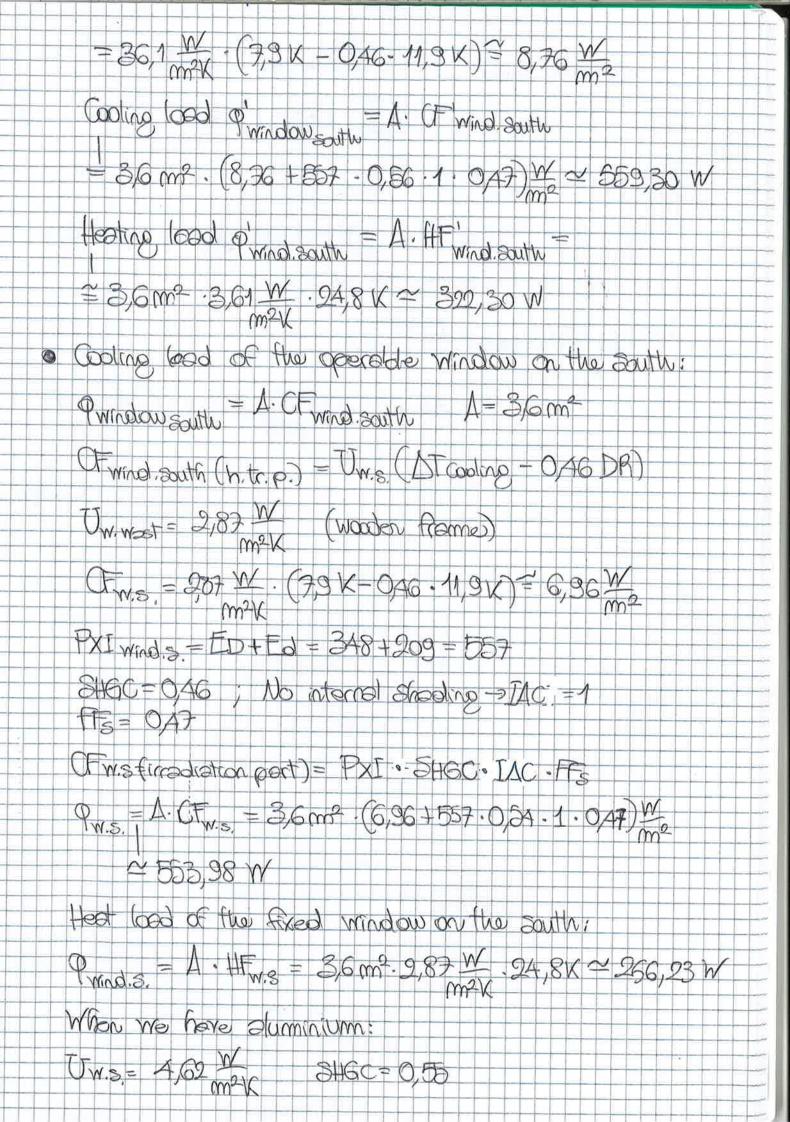
WEEKS POLEN TASK 1 Using the description in the presentation Stude how much (%) is the effect of applying, different modifications (changing, flue gos, adding on extra pane, using a law emis= sixty costing) on the Uvalue with respect to a benchmark case of double layer with air and no cating? (Keep the sap thickness 6 be 13 mm) Vonter Acenter + Vedoe Adoe + VonnAlemn = wolonin U Avrindou If we have a double come window: 1 + 1 1 h space = Udalde-pare (enter region) = hand, spare + honr, spare The Vanter or hopes by changing, the gas that fills the sap Mhen the pap thickness is 13 mm: by changing the pas that fills the pap from on to organ, the Trolle of the plass center decreases from 2,8 W/m2k to 2,68 W/m2k, which meens the Uvalue decreases 643% co. From Dir to Krypton, Tratue decrease to 26 W/max, 7, 4% ca. When the Ucenter Changes by adding an extra 0 pone Trajuderce oses from 2,8 W/m2K to 1,8 W/m2 V, so \$5,6 % (2) When the Tienter changes contro the place surfaces with a film that has a low emissivity, for instance emissivity = 0,1, the Trale of the contact of the place decreases from 2,8 m/mex to 1,8 m/mex TASK 2: Consider the house that me analysed in the last two examples, colulate the heating and cooling load of the other windows which are fixed 14,4 m² of the west, fixed 3,6 m² on the south (the some window and frame type). How much also the total value chang the frame of the mindow fram wooden one to aluminium? 1 The not area of walls (extuding doors and mindows)
of a building (ocated in Piacensa is 105,8 mm²,
the calculated To ralue is 0,438 W/m²K for the winter and 0,435 W/mºK for the summer Find the corresponding hooting and cooling load 2 A fixed host obsorbing double loyer glass (with a mooden frame) window at the east side of a building located in Pragenza has a surface of 14,4 m². In cose there are no internal and external abouting factors. Calculate the heating and cooling load of the corresponding to (wotony tent Tooling = 24°C Theating = 20°C Attaling = 31,9°C-24°C= 7,9°C= 7,9 K ATheoling = 90°C - (-4,8°C) = 24,8°C DB = 11,9°C Pwindow, west = A. CFwindow, west A = 14Am2 OF window, west = Uwindow west (ST cooling - 0,46 DR) hest transer part







OF W.s. (heat th. p.) = U'w.s. (Attabling - 0,46 DR) $=4.62 \frac{W}{m^2 V} \cdot (7.9 \text{ K} - 0.46 - 11.9 \text{ K}) \simeq 11.21 \frac{W}{m^2}$ Cooling load q'w.s. = A. CF'w.s. ~ 3,6m² · (1,21 + 557 · 0,55 · 1 · 0,47) \ = ≥ 958, 70 W Heating load p'w.s. = A. HF'ws = 3,6 m² · 4,62 W · 24,8 K ~ 412,47 W