1)

U=1/R

geg.: ^ ges.:

1.8 m*K/W	0.15m	U
0.035m*K/W	0.25m	
0.042 m*K/W	0.07m	

Lsg.:

Rt = 0.13W/m^2*K + 0.15m/(1.8 m*K/W) + 0.25m/(0.035m*K/W) + 0.07m/(0.042 m*K/W) + 0.04W/m^2*K
=9,063W/m^2*K

U = 1/(9,063W/m^2*K) = 0.11(m^2*K)/W

2)

geg.:

U = 0.7 W/m2K
delta T = 45 C
U1 = 2.45 W/m2K
U2 = 3.4 W/m2K

→ no high of the wall given → 3000mm used

Φ = U * A * (t1-t2)
=wall + window = (2.45 W/m2K * 0.153m^2 * 45K + 3.4 W/m2K * 0.027m^2 * 45K) + (2.45 W/m2K * 0.089m^2 * 45K + 3.4 W/m2K * 0.013 * 45K) + (2.45 W/m2K * 0.083 * 45K + 3.4 W/m2K * 0.013 * 45K) + (2.45 W/m2K * 0.093 * 45K + 3.4 W/m2K * 0.015 * 45K)

=(16,87 + 4,13) + (9.81 + 1,99) + (9.15 + 1.99) + (10.25 + 2,30)
= 56.49 W → 60W

3)

a) https://shop.systemair.com/en/products/c38413
b) geg.:

delta T = 45K
L = 0.75m3/s

Lsg.:

Φ = 0.75m3/s * 1.2 kg/m3 * 1000J/(kg*C) * 1.61W
= 1449 kg*W^2

Feedback:

1. Everything is correct, good job ☺
2. Not sure what is calculated. The task was to compare heat loss trough walls and windows before renovating ($U_{old\_wall} = 0,7$ and $U_{old\_window} = 3,4$) and after renovating ($U_{new\_wall} = 0,7$ and $U_{new\_window} = 2,7$). The formula for calculating heat loss trough a surface is correct, but for some reason the areas used in calculations are of wrong by multiple magnitudes. In engineering usually a small margin of error is allowed because real world systems are very complex and therefore engineers have to simplify these systems. Most things, from heating to bridges, are always build with some some spare margins to account for any simplifications and real life edge cases. However it is still very important to notice when something is off by multiple magnitudes, and as such I would recommend to always look critically at any result you've calculated and ask yourself it that actually makes sense in a given context. Also the wall height was given via room height, which was 2600mm.
3. Link is to a product catalogue, not any specific product, so not quite sure which product was chosen or why. Formula for calculating power of heating/cooling device is Φ = mass flow in a second * specific heat capacity * temperature difference, which gives us result in J/s (or Watts). Not clear on why watts were used inside the calculation. Also the airflow value is incorrect, but that may be from translating issues.