Problems

1. In a laboratory test, simulated solar beam radiation strikes a window glazing specimen at incident angle = 50°. The surface area of the specimen is 2.3 m². The intensity of the beam radiation (measured in the direction of travel) is 750 W/m². The solar heat gain through the window is measured to be 251 W. Determine the "SHGC" at the test condition.

2. A particular glazing system has center-of-glass characteristics as follows:

U-Value W/m²°C	Visible Transmittance	SHGC							
		Incidence Angle (Beam Radiation)							Hemispherical Diffuse
		0°	40°	50°	60°	70°	80°		
1.7	0.73	0.65	0.63	0.60	0.54	0.42	0.21		0.56

Consider the following scenario:

o   Direct-Normal Solar Beam Radiation (measured in the direction of travel) = 700 W/m² and strikes the glazing at incident angle = 20°

o   Diffuse & Reflected Solar Radiation = 200 W/m2 (measured in the plane of the glazing)

o   No interior shading device

Estimate the total solar heat gain per m² of glazing (W/m²).