α-2. Gliese 581 g.

Conditions as on the Earth, the same temperature – 1 pt.
Correct taking the necessary data from the tables – 0.5 pt.
Finding (any way) that the radiation from Gliese 581 is about 48 times less than that of the Sun – 2.5 pt.
Dependence on R – 1 pt.
Correct using the generalized Kepler's third law, calculations – 2 pt.
Final calculations and correct result – 1 pt.

β-2. Gliese 581 g.

2.1. Totally 5.5 pt, including:
Conditions as on the Earth, the same temperature – 0.5 pt.
Correct taking the necessary data from the tables – 0.5 pt.
Finding (any way) that the radiation from Gliese 581 is about 48 times less than that of the Sun – 1.5 pt.
Dependance on R – 0.5 pt.
Correct using the generalized Kepler's third law, calculations – 1.5 pt.
Final calculations and correct result – 1 pt.
2.2. Totally 2.5 pt, including:
Issue that the order of the size of the planet is comparable to the size of Earth – 0.5 pt.
$\alpha = p \times D_E / R_E$ – 0.5 pt.
Correct calculations, result about 14 μas – 0.5 pt.
Conclusion that the angular size of the object has to exceed the angular resolution at least several times, answer "no" – 1 pt.

α-3. Observations from Gliese 581 g.

3.1. Totally 5 pt, including:
Formulae for magnitude of the Sun (any way solution) – 3 pt.
Correct calculations – 2 pt.
3.2. Totally 3 pt, including:
Understanding that Gliese 581 is located in the zodiacal constellation of Libra – 1 pt.
Sun will be at opposite point – 1 pt.
Answer: constellation of Aries – 1 pt.

β-3. Observations from Gliese 581 g.

3.1. Totally 3.5 pt, including:
Formulae for magnitude of the Sun (any way solution) – 2 pt.
Correct calculations – 1.5 pt.
3.2. Totally 2 pt, including:
Understanding that Gliese 581 is located in the zodiacal constellation of Libra – 0.5 pt.
Sun will be at opposite point – 1 pt.
Answer: constellation of Aries – 0.5 pt.
3.3. Totally 2.5 pt, including:
Heat balance, the same amount of energy per unit area – 0.5 pt.
Finding spectral class and temperature (using HR diagram) – 0.5 pt.
Using Stefan-Boltzmann law – 0.5 pt.
Final formula – 0.5 pt.
Final calculations and result – 0.5 pt.