Name: _____ **Fall 2006**
Period: _____
Earth/Space Science

Classifying Stars By Spectra Activity

Notes
Fill in the blanks.

1. We can learn about the composition of stars based on their _____.
2. At specific wavelengths, stars have dark _____ lines on their spectra. We are all familiar with the visible spectrum of a rainbow (see p. 811 and p. 818).
3. Stars are assigned spectral types by the following letters: _____, _____, _____, _____, _____, _____, and _____.
4. Each class is subdivided into more specific divisions with numbers from _____ to _____. Ex) type A4 or A5
5. _____ stars are the hottest and _____ are the coolest.
6. The Sun is a type _____ star. The sun is a _____ star, with a surface temperature of _____.
7. The energy output from the surface of a star per second is called its _____.

Properties of Stars

Spectral Type (color)	Mass (relative to the Sun)	Surface Temperature	Luminosity (relative to the Sun	Radius (relative to the Sun)
O5 (Blue)	40.0x	40,000 K	5×10^5	18.0x
B5 (Blue)	6.5x	15,500 K	800	3.8x
A5 (Blue)	2.1x	8,500 K	20	1.7x
F5 (White)	1.3x	6,580 K	2.5	1.2x
G5 (Yellow)	0.9x	5,520 K	0.8	0.9x
K5 (Orange)	0.7x	4,130 K	0.2	0.7x
M5 (Red)	0.2x	2,800 K	0.008	0.3x

Star Classification
Use the table above to classify the following stars below.

1. Orius: This star has a surface temperature of about 40,000 K and has a radius 18 times greater than our Sun. **Spectral Type:** _____
2. Fregel: This star is much smaller than the Sun, only containing 0.7 times the mass of the sun. It also puts out much less energy, 0.2 time the energy output of the Sun. **Spectral Type:** _____
3. Regulus: This star outputs a puny 0.008 times the energy the Sun outputs. It is also very cool at only 2,800 K. **Spectral Type:** _____
4. Antarion: This star is over 3 times bigger than the Sun. It also contains over 6 times the mass of our Sun. **Spectral Type:** _____
5. Tetelgeuse: This star is about a 1000 K hotter than our Sun, but it's less than 1.5 times bigger than the Sun. **Spectral Type:** _____
6. Janos: This blue star is almost 10,000 K hotter than our Sun. **Spectral Type:** _____
7. Halpont: This star is almost the same size and temperature of the Sun.
Spectral Type: _____
8. Neva: This star is less than 2 times bigger than the sun, but it contains over 2 times as much mass. **Spectral Type:** _____
9. Kriger: This cool, small star is almost 1700 K cooler than the Sun. **Spectral Type:** _____
10. Leptos: This giant star is over a thousand times more luminous than the Sun.
Spectral Type: _____