Astronomy 110 -1,2,3 Anderson

Assignment 1 Key

From 5th ed
Ch1

1. E 2. D
3. B 4. A
5. E 6. C
7. D 8. B
9. D 10. D
11. E 12. E
13. A 14. B
15. B 16. C (Assuming today is not Saturday)
17. C 18. D
19. D 20. D
21. B
22. Planets, Stars, Comets, Moon, Dust Lanes, Nebula, Meteors, Galaxies (dwarf and full sized)
23. Stars that are so far away that we cannot make them out individually.
24. A collection of stars that are gravitationally bound to each other.

Calculations
1.
2X10^-2 * 3X10^3 = 2*3 X 10^(-2+3) = 6X10^1 = 60

Split into two parts. First:
4X10^-4 / (2X10^-3) = 4/2 X 10^(-4 - -3) = 2X10^-1 = 0.2

Second:
(2X10^-1)^2 = 2^2 X 10^(-1*2) = 4X10^-2 = 0.04
0.2^2 = 0.2 * 0.2 = 0.04

2.
c- year = 9.461 X 10^17 cm
AU = 1.496 X 10^13 cm
c-year / AU = 63242

3.
D = v * t
t = D / v
D = 1 AU = 1.496 X 10^13 cm
v = c = 2.9979 X 10^10 cm/s
t = D / v = 499.0 s = 8.32 min

4.
A.
109.2

B.
No stars are so far away that we cannot tell by eye how far away they are. Stars in constellations can appear close together but may in fact be widely separated.

C.
733 years
We know nothing about Rigel now only how it was 733 years ago.

5.
1054 - 6000 = 4946
4946 B.C.E. (Formerly B.C.) give or take a year because whatever idiot designed our calender forgot to put in a year 0.

6.
15/60 = 0.25 deg