

Homework 10

1. (30 points) Obtain relation between luminosity and angular diameter distances.

2.×2. (30 points) Obtain the expression for the Energy density

defined as: $E(z) = \frac{H(z)}{H_0}$ for the case of combined matter, radiation, cosmological constant and curvature.

3. (20 points) Obtain the expression for the age of the universe.