In-Class Exercise: The Global Water Budget

Below is a table showing estimated volumes of water in various storage compartments for the global water budget. Complete the calculations in the table and answer the questions.

Storage Compartment	Volume ($x10^3$ km^3)	Percent of Total
Water in Land Areas		
Fresh water lakes	125	_____
Saline Lakes	104	_____
Rivers	1.25	_____
Soil Moisture (unsaturated)	67	_____
Ground water (to depth fo 4000 m)	8350	_____
Ice Caps / Glaciers	29200	_____
Atmosphere	13	_____
World Ocean	1320000	_____
Total	_____	_____

1. Which part of the global water budget has the greatest percentage of water in storage?

   Which part has the least?

2. What percent of the total "water in land areas" is contained in the form of groundwater?

3. What percent of the total "water in land areas" is contained in the form of ice caps/glaciers?

4. Calculate the percent of storage in world oceans if climate change resulted in a doubling of the volume of water stored in icecaps/glaciers. Show all of your work.

5. Freshwater drinking supplies are derived primarily from either rivers or groundwater. Which storage compartment represents the greatest drinking water resource on the planet?

6. The western U.S. is associated with a significant number of dam projects on rivers. Many of these dams supply drinking water from the reservoirs. In terms of the hydrologic cycle, is damming / reservoir development the most efficient method of providing water resources? Why or why not, explain your answer.