

Name: \_\_\_\_\_

Quiz Section: \_\_\_\_\_

**ATMS 101**  
**Autumn 2013**

Homework #5

Due: Tuesday, December 3, 2013 at the **beginning** of class

Please show all your work.

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**#1.** Why are most of the world's major deserts located in the subtropics around  $30^{\circ}N$  and  $30^{\circ}S$ ?

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**#2.** How would the length of the day change if there were no atmosphere? Why?

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**#3.** Fifty million years ago, the Earth's climate was much warmer and the difference in temperature between the tropics and the poles was much less than today. How would this change the strength of the jet stream compared to today? Explain.

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**#4.** During very cold nights in western Washington, there is often a north-south oriented line of clouds over the center of Puget Sound while the sky is clear over the land on both sides. Why does this occur? (Hint: Puget Sound is not the same temperature as the land around it)

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**#5.** Why do clouds tend to develop at the crests of mountain barriers during the day?

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**#6.** In Miami, a sea breeze develops during the day, followed by a land breeze that develops at night. Compare the cloudiness over the land and the water at each of these times.

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