Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Period\_\_\_\_

**Chapter 13 Storms Review**

1. What are the 3 things you need to form a thunderstorm?
2. **2 main types of thunderstorms**, air mass and frontal:
   1. They are differentiated by their lift mechanisms. Explain what causes lift in both types.
      1. Air Mass
      2. Frontal
   2. At what time of day are air mass thunderstorms most likely to occur? Why?
   3. What type of front are the most severe frontal thunderstorms associated with? Why?
3. What are the 3 signs you are experiencing a severe thunderstorm instead of just a minor thunderstorm?
4. What are the 3 hazards of a severe thunderstorm?
5. Explain the cause of the following. Be specific.
   1. Lightning (Tie this in to Thunder):
   2. Tornado:
   3. LARGE hail:
6. If outside, what should you do to minimize your risk of being struck by lightning?
7. Draw a **cumulonimbus cloud**. Mark the location of the positive and negative charges that would be found there if a lightning storm was occurring. Explain how this would interact with the positively charged surface of Earth.

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(Surface of Earth)

1. Using the table below, fill in information about the **3 stages of thunderstorm development**.

|  |  |  |  |
| --- | --- | --- | --- |
|  | 1st Stage | 2nd Stage | 3rd Stage |
| Name of the Stage |  |  |  |
| Describe the type, shape, or size of the cloud. |  |  |  |
| Direction of air movement (up vs down) |  |  |  |
| Precipitation Present?  Severity of Storm?  Other weather events that might be present? |  |  |  |

1. **Tornadoes:**
   1. Is an F2 or F3 tornado stronger?
   2. What is the rating of the strongest tornadoes?
   3. During what season do most tornadoes occur? Explain why.
   4. Where is tornado alley? List 5 states that are in the alley.
   5. What is the difference between a funnel cloud & a tornado?
   6. What time of day do most tornadoes occur?
   7. What scale is used to classify tornadoes?
      1. What factors does this scale consider when it rates tornadoes?
      2. When can you use this scale?
2. **Tropical Cyclones:**
   1. What do we call them when they are in the Atlantic Ocean?
   2. What sides of the continents are most often hit by **hurricanes**?
   3. Why is that side of the continent hit most often?
   4. What months are hurricanes most likely to hit the U.S.? Why?
   5. What 2 things does a hurricane need to form?
   6. Where do hurricanes originate (come) from?
   7. List 2 different locations on Earth that hurricanes are NOT likely to form and explain why.
   8. What are the 3 hazards present during a hurricane?
   9. What causes the most destruction during a hurricane?
   10. List the 4 stages of hurricane development in order:

3.

4.

* 1. What is the difference between a Tropical Depression vs. a Tropical Storm?
  2. List 2 things that determine if a low pressure system is classified as a Tropical Storm vs. Hurricane?
  3. Where are the winds of a hurricane the strongest? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Calmest?\_\_\_\_\_\_\_\_\_\_\_

1. **Hurricane Andrew map & graph**:
   1. How are wind speed & air pressure related in a hurricane? (Ex. When wind speed goes up, air pressure goes \_\_\_\_\_\_\_\_\_.)
   2. If given a map of a hurricane path, what locations would result in the hurricane :
      1. Loosing strength, weakening? Why?
      2. Gaining strength? Why?
2. List the 3 types of reoccurring weather, their cause and damage that may result.

|  |  |  |
| --- | --- | --- |
| Reoccurring Weather | Cause | Damage |
|  |  |  |
|  |  |  |
|  |  |  |

|  |  |
| --- | --- |
| 12oF  34oF  55oF  77oF  Ground **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_­**  **#1** | 50oF  59oF  68oF  77oF  Ground **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_­**  **#2** |

**Air Temperature**

1. The two diagrams above show how the atmospheric temperature changes with altitude above the ground.
   1. Which diagram, #1 or #2, shows the most **unstable** atmosphere? EXPLAIN your choice.
   2. Which diagram, #1 or #2, is most likely to lead to a severe thunderstorm? EXPLAIN WHY it is more likely to lead to a severe thunderstorm than the other. Be specific.

**Compare & Contrast Questions:** For the following 2 questions you must:

* Explain similarities **and** differences
* Explain **both** terms when describing differences.
* You may write in sentences, use a Venn Diagram or use a table.
* Be specific and detailed.

1. Compare and contrast **Stable Atmosphere** and **Unstable Atmosphere**. (You cannot say they both involve the atmosphere. Explain both terms when describing differences. Similar type question on test is worth 3 points.)
2. Compare and contrast **Heat Waves** and **Cold Waves** (You cannot say they are both waves. Explain both terms when describing differences. Similar type question on test is worth 3 points.)
3. **Synthesis:** Describe in a **short** (around 4 sentences) **but thorough and detailed** explanation how the 3 terms **cumulus stage, updraft,** and **latent heat** could be **related to each other** to **produce hail in a strong thunderstorm.** (Similar type question on test is worth 3 points.)