Saffir-Simpson and Fujita Scale
Study Rubric

Fujita Scale: Created in 1971 by Dr. T. Theodore Fujita, it is used to classify tornadoes according to their rotational wind speed.

- The wind speeds are estimates based on the damage a tornado does to man-made structures. However, classifying the tornado based on damage is somewhat subjective.
- Typically most tornadoes are only F0 or F1, only small percentages per year become F2 or F3, even rarer are F5 tornadoes which may only happen once per year.

Scale	Category	MPH	Knots	Expected Damage
F0	Weak	40-72	35-62	Light: tree branches broken, sign boards damaged
F1		73-112	63-97	Moderate: trees snapped, windows broken
F2	Strong	113-157	98-136	Considerable: large trees uprooted, weak structures destroyed
F3		158-206	137-179	Severe: trees leveled, cars overturned, walls removed from buildings
F4	Violent	207-260	180-226	Devastating: frame houses destroyed
F5		261-318	227-276	Incredible: structures the size of small autos moved over 100 meters, steel-reinforced structures highly damaged

*The scale continues up to a theoretical F12. Very few, if any, tornadoes have wind speeds in excess of 318 mph.

- The Size of a tornado is not necessarily an indication of its intensity. Large tornadoes can be weak, and small tornadoes can be violent.

- The scale is based on damage caused by the tornado, and therefore also subjective. It is up to the surveyor to determine the extent of the damage caused by the tornado. Once the damage has been evaluated the tornado is given an official rating by the National Weather Service.

- NOAA has created an Enhanced Fujita scale that has only recently been put into effect. It includes a more detailed explanation of damages and wind speed based on overall velocity and 3-second gusts.

Questions:

1. True/False – Tornadoes are given a rating on the Fujita scale based on their width at the ground level.
2. True/False – The larger the tornado the more damaging it is.
3.  This tornado producing 200mph winds is capable of tearing off roofs and walls and overturning cars. What category is it?

Saffir-Simpson Scale: Developed in 1971 to measure the severity of hurricanes based on wind speed. Can determine the potential property damage and expected flooding along the coastline.

- Storm surges are not used as a contributing factor because of how highly dependant they are on the slope of the continental shelf and the shape of the coastline.

Category	Central Pressure (mb)	MPH	Storm Surge (ft)	Expected Damage
Tropical Storm	-- --	39-73	-- --	-- --
1	≥980	74-95	3-5	No significant damage to buildings. Minor tree damage, flooding and pier damage.
2	965-979	96-110	6-8	Some roofing, door, and window damage. Considerable tree blow-down. Flooding of coastal and low-lying areas 2-4hrs in advance of storm.
3	945-964	111-130	9-12	Some structural damage to small residences and utility buildings. Large tree blow-down. Flooding 3-5hrs in advance of storm. Flooding destroys structures around coast. May require evacuation.
4	920-944	131-155	13-18	Extensive wall damage to buildings and complete roof structure failure. Mobile homes destroyed. Major damage to first floor of buildings. Massive evacuation required.
5	<920	>155	>18	Complete roof failure on all buildings, small buildings completely destroyed. All low-lying escape routes are cut off 3-5hrs in advance of storm. Major damage to first floor of buildings not higher than 15ft above sea level or w/in 500yds of shore. Massive evacuation w/in 10mi. of shore.

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