1. **Mark your confusion.**
2. **Show evidence of a close reading.**
3. **Write a 1+ page reflection.**

A Crucial Climate Summit
Source: The Week, November 29, 2015

More than 190 countries will gather in Paris on November 30 to try to slow climate change. Is it too little, too late? Here's everything you need to know:

What is the goal of the conference?
The main goal of the 21st Conference of Parties is to try to limit the global temperature increase over pre-industrial levels to 2 degrees Celsius (3.6 degrees Fahrenheit). If temperatures rise above that threshold, climatologists say, the damage will be severe. A rise in sea level of at least several feet will inundate many coastal cities, while huge swaths of the world will be subjected to record heat waves, drought, floods, and famine. To avoid this fate, countries would have to collectively slash carbon dioxide emissions to below 40 billion tons a year by 2030; currently the world is on track to emit roughly 59 billion tons a year by 2030. But with the effects of 1-degree global warming already evident — including altered weather patterns and melting glaciers and sea ice — even reluctant nations like China appear ready to enter into a binding international agreement that would set emissions limits for each country. "We're not in a world of business as usual anymore," says U.N. climate chief Christiana Figueres. "We're in a world of business as urgent."

Why didn't nations act earlier?
Cutting emissions required accepting a lot of immediate economic pain for abstract future gain, which human beings resist. In Kyoto in 1997, delegates secured a legally binding pact to address climate change. But the U.S. Congress refused to ratify the agreement, so it was not binding. A total of 37 industrialized countries did pledge to cut emissions by an average of 5 percent against 1990 levels by 2012, but 16 of the nations failed to hit their targets. There was a greater sense of urgency at Copenhagen in 2009, but the global financial crisis left countries reluctant to commit to reductions that could dampen economic growth. In the end, delegates were able to come up with only a weak, nonbinding commitment to "take note" of the 2-degree ceiling. The run-up to Paris has been very different.

How so?
This time around, each of the 195 countries and the EU have been asked to submit a specific, individual reduction in emissions they intend to make by 2030. Almost 150 countries have thus far submitted targets with sizable reductions. President Obama has committed the U.S. to a reduction of between 26 and 28 percent from 2005 levels by 2025. The cuts will be made not by reducing Americans' overall energy use, but by burning far less coal, doubling the amount of electricity generated by solar and wind power, and imposing stricter fuel efficiency and greenhouse gas standards on medium- and heavy-duty vehicles. China, which is currently dealing with uncontrollable smog levels in its cities, has pledged that its carbon emissions will peak by 2030, and that renewable energy will account for 20 percent of electricity consumption by that year.

Who could ruin the deal?
Poorer, less developed countries that face serious consequences from climate change have threatened to walk out of the conference. They are demanding a pledge from richer, industrialized nations to provide $100 billion a year to help them adapt to rising seas and hotter temperatures. An argument is also brewing between France and the Obama administration, which doesn't want the pact to be legally binding. For a binding treaty, the White House would need ratification from the Republican-

led Congress, which it almost certainly would not get. Even if delegates did manage to overcome these disputes and secure a universal agreement, the current pledges submitted would still result in warming of between 2.7 and 3.5 degrees C. At best, says Tim Gore of the global charity Oxfam, the conference is seeking an agreement that would "only take us from a 4-degree catastrophe to a 3-degree disaster."

Is 2 degrees a lost cause?

Many scientists believe we've already emitted enough greenhouse gases to lock in a 2-degree Celsius rise, since those gases will continue to have a warming effect for up to a century. And total emissions are likely to continue to rise, with India insisting it has to double its coal production by 2020 to help lift its massive and rapidly growing population of 1.3 billion out of poverty. "Barring some technological miracle, we'll probably blow right past it," says climate scientist Ray Pierrehumbert.

What then?

Some scientists and technologists, including Bill Gates, argue that innovation is our best hope. Researchers could focus on developing an alternative form of energy production that produces no greenhouse gases. Another possibility is carbon capture and storage — a still-unproven technology in which power plants pump their carbon emissions into the ocean or underground reservoirs, where the gases can't trap the sun's heat. A much riskier enterprise is geo-engineering. (*See below.*) But given the uncertainty of innovation, the Paris climate summit will still be a critical test of the world's seriousness about responding to climate change. "The key for Paris," says President Obama, "is just to make sure that everybody is locked in, saying, 'We're going to do this.'"

Hacking our planet's atmosphere

As climatologists resign themselves to the inevitability of major warming, some are turning their attention to "geo-engineering" — using technology to artificially cool the climate to compensate for the greenhouse effect. One team has proposed erecting a giant mirror in outer space to reflect the sun's rays away from the Earth; another has suggested covering Greenland's ice sheets in a shiny blanket that would reflect solar radiation. Perhaps the most feasible proposal is to use aircraft or powerful missiles to spray out large quantities of sulfur dioxide particles at high altitude, creating a sulfur cloud that reflects solar radiation. But geo-engineering is highly controversial. Some scientists warn that disrupting the enormously complex system we call climate would have unpredictable and potentially catastrophic results: It might get cooler over one continent, but hotter elsewhere, while storm and rainfall patterns could change dramatically. Matt Watson, a member of a British team researching geo-engineering, admits that it's impossible to predict how intervening in the climate could affect the planet. "Personally, I find this stuff terrifying," Watson said.

Possible response questions:

- Estimate your carbon footprint at www.nature.org/greenliving/carboncalculator/ and comment on what you might do to reduce your carbon footprint.
- Pick a passage from the article and respond to it.