Making the Final (Part I)

To qualify for the finals of the X-Games Skateboarding competition, skateboarders must complete one 45 second run. They earn points in two ways:

- A score out of 100 for the Skill of the tricks performed

- A score out of 100 for the Amplitude (air) the skateboarder gets

40% of the Skill score and 60% of the Amplitude score are added together to produce the Weighted Score. To make the final, the skater's Weighted Score must be at least 60. (All Weighted Scores are rounded to the nearest tenth.)

1. You score 80 points for Skill and 50 points for Amplitude. What is your Weighted Score?

2. Make a table that shows some possible performance scores for Skill and Amplitude and the Corresponding Weighted Score. Be sure to choose a range of high and low scores for both programs in your table.

Note: The table is drawn for you on the next page

Skill Score	Amplitude Score	Weighted Score
80	50	

3. Make a group graph (four tables per graph) to represent the situation.

   The x-axis represents the Skill score (S).

   The y-axis represents the Amplitude score (A).

   a. Use a **BLACK** MARKER to plot the points in the tables you and your group members created.

   b. Use a **GREEN** MARKER to circle the points that represent a Weighted Score that qualifies for the team.

   c. Now add a **BLUE** STAR to those points where the Weighted score is EXACTLY 60.

What patterns do you notice in your group graph?

Making the Final (Part II)

A new rule has been introduced to the qualifying process. It states that if a skater scores less than 50 points for either Skill or Amplitude then that skateboarder cannot make the X-Games final.

1. On your group graph from Part I, use a **RED** MARKER to circle *all* the points that represent a score that will not make the final because of the new rule.

What new patterns do you notice in your group graph?

2. Develop a System of Inequalities to algebraically describe the situation. Only use the variables S (Skill score) and A (Amplitude score).

3. Shade the region of the graph that contains the points that make the X-Games skateboarding final.

Extension Questions
4. What is the minimum Skill score a skateboarder can receive and still make the final?
5. What score is required for Amplitude to make the final with the minimum Skill score?
6. A skater has a particular Skill score. How can she/he figure out the minimum Amplitude score needed to make the team?