

## Student Guide for POW 12: Kick It!

### 1. PROBLEM STATEMENT (6 pts)

#### a. Restate the story of the POW in your own words

- 0 – No story stated
- 1 – Story is copied from text
- 2 – Story is partially restated and partially copied
- 3 – Story is restated but lacks some necessary information
- 4 – Story was written in students own words and includes all necessary information

#### b. Restate the questions in your own words

- 0 – No questions stated
- 1 – Questions are copied from text or incomplete
- 2 – Questions are stated in student's words, and is clear and concise

### 2. PROCESS (14 pts)

#### a. Describe your initial ideas concerning the questions, explain

- 0 – No initial ideas expressed
- 1 - Poorly written/incomplete/vague statement of ideas
- 2 - Complete and thorough explanation of initial ideas

#### b. Describe how you worked on the questions

- 0 – No methods described
- 1 – Poor overall description that is incomplete and vague, with no examples showing how your process/strategy changed for each question
- 2 – A satisfactory description of your processes, with adequate examples showing how your process/strategy changed for each question
- 4 – A complete description of your methods, with a comprehensive explanation of how your process/strategy changed for each question
- 6 – A detailed description of your methods, with a comprehensive explanation of how your process/strategy changed for each question and new values created for additional scoring systems

#### c. Provide all diagrams and sketches

- 0 – No diagrams provided
- 1 - Poor diagrams with little if any labels/explanations/comments
- 2 - Complete diagrams with clear and concise labels/explanations/comments

#### d. Describe any problems you had, and how you solved them

- 0 – No description of problems encountered
- 1 – Vague and limited discussion of problems encountered
- 2 – Excellent discussion of several problems encountered, including a thorough record or your thought process used to deal with the problems

#### e. Describe all assistance provided and how it helped you

- 0 – No statement of assistance
- 1 – Clear statement of assistance with minimal description of how it helped

2 – Clear statement of assistance with a complete description of how it helped

**3. CONCLUSIONS (12 pts)**

**A1. State the highest impossible score for the Free Thinkers' scoring system and prove it is impossible**

- 0 – No score stated
- 1 – Score is stated with a limited or vague proof of why it is impossible
- 2 – Score is stated with a detailed proof of why it is impossible

**A2. Prove that there are higher possible scores than stated in 3a**

- 0 – No proof given
- 1- A limited or vague proof is given
- 2- A detailed proof is given to prove there are higher possible scores

**B1. Describe results obtained for other scoring systems**

- 0 – No description given
- 1 – A scoring system is given with all possible scores, but other information is missing
- 2 – Scoring system is given with most of the possible scores, but a limited description of why a specific score is the highest possible score
- 4 – Scoring system is given with all possible scores with a detailed description of why a specific score is the highest possible score

**B2. Describe any general ideas or patterns you found that apply to all scoring systems**

- 0 – No description given
- 1 – A poor/vague/limited/incomplete description of any general ideas or patterns
- 2 – A detailed description of any general ideas or patterns

**B3. Prove your ideas/patterns apply in all cases (in general)**

- 0 – No proof provided
- 1 – A poor or incomplete proof
- 2 – A complete and thorough proof

**4. EVALUATION (10 pts)**

**a. State the difficulty level of the problem (scale of 1-10), explain**

- 0 - no explanation of level
- 1- minimal explanation of level
- 2 - Complete and thorough explanation of level selected

**b. Describe your personal reaction/opinion to the problem**

- 0 - no opinion or reaction stated
- 1 - a minimal statement with little support
- 2 - a well discussed statement of opinion/reaction

**c. Identify the best/worst parts of the problem**

- 0 - no identification of best/worst parts of exp
- 1 - minimal listing of best/worst parts of exp
- 2 - Complete and thorough listing of best/worst parts of exp

**e. Write a one paragraph summary of “what you learned from the problem”**

- 0 - No summary paragraph
- 1. A brief, poorly written summary that demonstrates little understanding of the problem, its solution and the mathematical ideas and concepts
- 2. A fair summary that includes some support, but lacks one or two key points that would have demonstrated understanding of the problem, its solution, and the mathematical ideas and concepts
- 3. A good summary that demonstrates an acceptable understanding of the problem, its solution and the mathematical ideas and concepts, however could be described in greater detail
- 4. A well written summary written that demonstrates a thorough understanding of the problem, its solution and the mathematical ideas and concepts

**5. SELF-ASSESSMENT (8 pts)**

**a. Grade and Justify your work using a self-assessment scoring rubric**

- 0 – Work not graded with rubric
- 1 – Score values provide with no justification
- 2 - Score values provide with minimal rationale and many/most values not acceptable based on scoring guide criteria
- 3 - Scores values provided with fair/good rationales, but some values not acceptable based on scoring guide criteria
- 4 - Score values provided with strong rationales, all values acceptable based on scoring guide criteria

**b. Write a one paragraph summary that identifies your weakest areas in this POW and describe the problems you had or the reasons you become “stuck” in these areas**

- 0 – No paragraph written
- 1- A brief, poorly written summary that does not allow the reader the ability to understand why you had problems in specific areas of the POW and could not finish a problem, come to a solution, or make a generalization
- 2. A fair summary that is quite limited, and does not go into detail on problem areas and their specific reasons
- 4. A well written summary written that clearly identifies the weakest areas of the POW and describe the specific reasons that you had problems and how you will try to resolve these problems