



NBA Apply Problem

Is the Bank Open?

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A *bank shot* is a shot that hits the backboard first. If it goes in, you might hear a broadcaster yell, "Off the glass!" or "The bank is open!" If it misses, your opponent might call it a "brick." Bank shots can be very effective, sometimes even more effective than straight-on shots.

**Bank Shot Video**www.vimeo.com/190274692

When you play basketball, do you like taking bank shots? What about your favorite professional players... do they "use the glass" when they shoot?

To explore this situation, identify the locations from which a shot could hit the backboard and still go in the basket.



From what spots on the court are bank shots possible? From where are bank shots not possible?

Evaluation Criteria

Your response will be judged on four criteria:

1. Using a mathematical model to analyze bank shots geometrically
2. Analyzing the situation to determine locations on the court where bank shots are possible
3. Providing a justification for any conclusions that you make
4. Discussing the limitations of your model for analyzing this situation

Criteria	Scale				
	4	3	2	1	0
Model	Develops or uses a reasonable model to explore the situation and explains the model, and makes major improvement to the model.	Develops or uses a reasonable model, explains the model, and makes minor improvement to the model.	Develops or uses a reasonable model, but only minimally explains the model, and makes no improvement to the model.	Uses an invalid model with little explanation, and no attempts were made to improve the model.	Does not develop a model.
Analysis	Correctly identifies locations on the court from which a bank shot could be made.	Correctly identifies most of the locations on the court from which a bank shot could be made.	Correctly identifies some of the locations on the court from which a bank shot could be made.	Does not identify locations on the court from which a bank shot could be made	Does not attempt to identify locations from which a bank shot could be made.
Justification	States a correct and reasonable conclusion based on the analysis; includes supporting images and diagrams.	States a reasonable conclusion based on the analysis with only minor errors; includes supporting images and diagrams.	States a reasonable conclusion with major errors; includes only some supporting images and diagrams.	States an incorrect or reasonable conclusion; includes limited supporting images and diagrams.	Does not state a conclusion.
Limitations	Correctly identifies at least one major and one minor limitations of the model.	Correctly identifies only one major or one minor limitation of the model.	Correctly identifies only one minor limitation of the model.	Incorrectly identifies one or more limitations of the model.	Does not list any limitations.