

Quizbit Individual Rubric

	<u>Rubric item</u>	<u>Description</u>	<u>Points</u> (Circle One)
Completeness	Relevant physics	High level Uses relevant physics in solution attempt	6
		Mid level Some, but not all physical concepts used are relevant to the situation	4
		Low level Physical concepts are mentioned	2
	All parts attempted	High level All parts of problem have significant effort shown	6
		Mid level Some parts of problem have significant effort shown	4
		Low level Some parts of problem are started	2
Clarity of Communication	Legibility	High level All parts of solution are legible	6
		Mid level Some parts of solution are hard to read	4
		Low level Significant parts of solution are hard and/or impossible to read	2
	Format	High level Solution is highly organized and leads the reader through from start to finish in a logical, easy to follow manner	6
		Mid level Solution is mostly organized, but it is necessary to hunt for important pieces	4
		Low level Path of solution is hard to follow. Important pieces of solution are scattered and unlabeled.	2
Total:			

Quizbit 2 Group Rubric

	<u>Rubric item</u>		<u>Description</u>	<u>Points</u> (Circle One)
Completeness	Relevant physics	High level	Uses relevant physics in solution attempt	6
		Mid level	Some, but not all physical concepts used are relevant to the situation	4
		Low level	Physical concepts are mentioned	2
	All parts attempted	High level	All parts of problem have significant effort shown	6
		Mid level	Some parts of problem have significant effort shown	4
		Low level	Some parts of problem are started	2
Clarity of Communication	Legibility	High level	All parts of solution are legible	6
		Mid level	Some parts of solution are hard to read	4
		Low level	Significant parts of solution are hard and/or impossible to read	2
	Format	High level	Solution is highly organized and leads the reader through from start to finish in a logical, easy to follow manner	6
		Mid level	Solution is mostly organized, but it is necessary to hunt for important pieces	4
		Low level	Path of solution is hard to follow. Important pieces of solution are scattered and unlabeled.	2
Correctness	Part (a) - Velocity	High level	Velocity is found to be $2\pi R / T$ using complete and correct Kinematic arguments	4
		Low level	Kinematic ideas are used in an attempt to find the velocity of the marble. Explanation may be incomplete or incorrect.	2
	Part (a) - UCM	High level	It is recognized and communicated that the motion of the marble is Uniform Circular Motion and thus the acceleration magnitude must be v^2 / r (or equivalently that the net force magnitude must be $m v^2 / r$)	4
		Low level	UCM is recognized, but either not clearly indicated or not applied correctly.	2
	Part (a) - Force analysis	High level	Free Body Diagram shows the normal force pointing perpendicular to the surface of the bowl and gravity pointing straight down. Angles and axes are indicated. Newton's 2nd law is applied in agreement with the FBD. Both X and Y directions are considered.	8
		Mid level	Both X and Y directions are considered. Free body diagram and/or Newton's 2nd law application contain errors, or are slightly incomplete.	5
		Low level	May not treat X and Y directions separately. It is clear that a force analysis is attempted, but it contains many errors or is largely incomplete.	3
	Part (a) - Symbolic solution	High level	The correct relationship between R, T, Theta, and g is found ($R = T^2 g / (4 \pi^2 \tan(\theta))$)	3
		Low level	An easily identifiable algebraic mistake is made and an incorrect answer is obtained. Perhaps something is not squared, or something is divided instead of multiplied.	2
	Part (b) - Sensemaking	High level	Sensemaking thoughts are complete, reasonable, and easy to follow. Units or dimensions of both the expected answer and the found answer are explained.	5
		Mid level	Sensemaking thoughts are mostly complete. Reader may need to make assumptions that are not explained by the solution.	3
		Low level	Some comparison or sensemaking is present	2
Total:				