InteGreat Worksheet

1. For each problem, approximate the area under the given function using the specified number of rectangles/trapezoids.

#	Function	Interval	# of Partition	Left Sum	Right Sum	Midpoint Sum	Trapezoid	Average Sum
1	$f(x) = \sqrt{4 - x^2}$ *Type "sqrt" for √*	[-2,2]	8					
2	$f(x) = 2^x$	[0,1]	5					
3	$f(x) = \sin(x)$	[0,3.14]	8					

a) Using the applet, for each function, which method gives you the highest and lowest sum? Explain why?

b) Calculate the area under function #1 by hand. From *part a,* which method gave you the closest area? Explain your answer.

c) Calculate the area of the rest of the functions by hand using left and right sum techniques. Check your answer with the table above. (Hint: Use *partition size* for your reference)

2. Find the area under function $f(x) = 2x^2 - 5x + 7$ between $x = -2$ and $x = 5$. Complete the table below using InteGreat.

Number of Partitions	Partition Size	Actual Area = ____85.1667_____					Method with least Error. Write Left, Right, Midpoint, Trapezoid, or Average
		Area Approximation					
		Left Sum	Right Sum	Midpoint Sum	Trapezoids	Average Sum	
1							
5							
15							
25							
50							