AP Calculus: Related Rates Digital Portfolio **Name:**_____

You will complete this assignment and upload to the Math / AP Calculus section/tab of your digital portfolio. For each part, you will

1. Show your work and solve
2. Write the complete sentence clearly explaining your answer in context
3. **Explain your thought process in words.** This includes decisions you made such as what values were constant, which formula you used, and any additional information you might have had to calculate before solving the problem as a whole. This should be your reflection to your entry for your digital portfolio – not handwritten on this sheet.

After you have completed the assignment and uploaded to your digital portfolio, share the link to your digital portfolio with me (kregan@wcpss.net). You will also turn this sheet in to me on Monday.

Coffee is draining from a conical filter into a cylindrical coffee pot at a rate of 16 in^3/min. Both the conical filter and cylindrical coffee pot are 8 inches across and 8 inches deep.
(a) How fast is the level in the coffee pot rising when the coffee in the cone is 6 inches deep?

(b) How fast is radius at the top of the water level in the conic filter changing when the coffee in the cone is 6 inches deep?

(c) How fast is area at the top of the water level in the conic filter changing when the coffee in the cone is 6 inches deep?

(d) How fast is the level in the coffee pot rising when the coffee in the cone is 6 inches deep?