Books, notes (in any form), and calculators are not allowed. *Show all your work.* Good Luck!

1. (4 pts) Find the critical numbers of the function.

$$f(t) = (t^2 - 16)^3$$

2. (4 pts) Turn in Section 2.8, #15 by 3pm today. If you turn it in immediately after turning in this quiz, I'll give you 2 bonus points.

3. (7 pts) A plane flying horizontally at an altitude of 4 mi and a speed of 500 mi/h passes directly over a radar station. Find the rate at which the distance from the plane to the station is increasing when the plane has flown horizontally 3 miles.

[Remember that significant partial credit will be given for clearly and accurately labeling the picture, and indicating values and equations in correct mathematical notation.]