

AP Calculus AB Q2 Concepts & Formulas Sheet

1. Steps to finding the derivative of an inverse

- a. _____
- b. _____
- c. _____
- d. _____

2. Steps to solving Related Rates problems:

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____
- f. _____
- g. _____

3. Motion Concepts

- a. An object moves right/up when _____
- b. An object moves left/down when _____
- c. An object stops when _____
- d. An object speeds up when _____
- e. An object slows down when _____
- f. The relationships between position, speed, velocity and acceleration are _____
- g. A particle subjected to gravity has a maximum height when _____
- h. A particle subjected to gravity hits the ground when _____

4. Function Analysis Concepts

- a. f has critical points when _____
- b. f has horizontal tangent lines when _____
- c. f has vertical tangent lines when _____
- d. f is increasing when _____
- e. f is decreasing when _____
- f. f has a local minimum when _____
- g. f has a local maximum when _____
- h. f has absolute extrema at _____
- i. f is concave up when _____
- j. f is concave down when _____
- k. f has an inflection point when _____

5. Steps to solving Optimization problems:

- a. _____
- b. _____
- c. _____
- d. _____

- e. _____
- f. _____
- g. _____
- h. _____

6. L'Hospital's Rule:

7. Mean Value Theorem:

8. Geometry Formulas needed for RR & Optimization

a. Distance Formula:

b. Similar Figures:

c. Area of a circle

d. Circumference of a circle

e. Pythagorean Theorem

f. Trig angle relationships:

g. Area of a Triangle

h. Area of a Rectangle

i. Area of a Trapezoid

j. Area of a Square

k. Volume of a Cube

l. Volume of a Prism

m. Volume of a Cylinder

n. Volume of a Pyramid

o. Volume of a Cone

p. Volume of a Sphere

Add something about tangent lines above the curve with concavity = overestimate, etc (GO OVER 2017 # 4)