Calculus I MATH 1512 (4) University of New Mexico (UNM) Q&A Practice Quiz

1. If (c, f(c)) is a point of inflection of the graph of f, then either f"(c)=0 or f" is undefined at c
Answer: Points of Inflection

2. Where first derivative is 0 or undefined
Answer: Critical Value

3. Use critical values and END POINTS in the function
Answer: Find absolute extrema

4. If m>n: NO HA
If m=n: HA = co-eff of m/co-eff of n
If m<n: HA: y = 0
Answer: Horizontal Asymptote Rules

5. If f(x) is continuous on [a,b] and differentiable on (a,b), there is at least one point (x=c) where f'(c)= F(b)-F(a)/b-a
Answer: Mean Value Theorem

6. If f is continuous on [a,b] then f has an absolute maximum and an absolute minimum on [a,b]. The global extrema occurs at critical points in the interval or at endpoints of the interval.
Answer: Extreme Value Theorem

7. If f is continuous on [a,b] and k is a number between f(a) and f(b), then there exists at least one number c such that f(c)=k
Answer: Intermediate Value Theorem

8. If f(x) is continuous on the closed interval [a, b], differentiable on (a, b), and satisfies f(a) = f(b), then for some c in the interval (a, b), we have f'(c) = 0 Answer: Rolle's Theorem

9. Find HA: y = (x+2)/(sqrt(x^2+3))
Answer: y= +1 and y = -1

10.A pair of equations that define the x and y coordinates of a point in terms of a

third variable called a parameter.
Answer: parametric equations

11. Given x and y, how to parameterize?
Answer: Table: |t | x | y| Plug in x,y to graph

12.An object moving along a line through the point (x0, y0), with dx/dt = a and dy/dt = b, has parametric equations
Answer: x = x0 + at,
y = y0 + bt

13.Horizontal Asymptote for exponential functions?
Answer: y = k(if y = e^x + k)

14.If the function is not continuous, does the limit exist?
Answer: The limit exists if there is removable discontinuity

15.What happens if you half delta(n) while calculating integral Answer: The difference between upper and lower estimate gets halved; more accurate prediction since velocity is measured more frequently