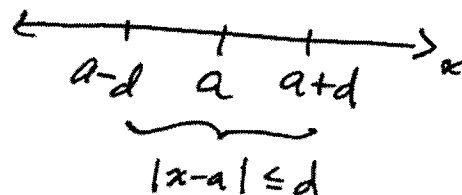


The Terms in TAYLOR'S Inequality

a = the center

d = max distance from center



$|x-a| \leq d$ is the interval of concern

M = the MAX OR BOUND OF $|f^{(n+1)}(x)|$
for $|x-a| \leq d$

= Similar to the MAXIMUM
SLOPE OF $T_n(x)$ on interval

= MAX of $|f^{(n+1)}(a-d)|$ and $|f^{(n+1)}(a+d)|$
usually

= 1 if $f(x) = \sin x$
or $f(x) = \cos x$

TAYLOR'S INEQUALITY: IF $|f^{(n+1)}(x)| \leq M$ for $|x-a| \leq d$,

THE ERROR IN $T_n(x) \approx f(x)$ IS $R_n(x)$ AND

$$|R_n(x)| \leq \frac{M}{(n+1)!} |x-a|^{n+1} \text{ for } |x-a| \leq d.$$
