1. The cost of building wooden pencils is given by a function $C(n)$ where $C$ is the cost in dollars and $n$ is the number of pencils, measured in thousands. Explain what $C^{\prime}(50)=$ 37.5 means in language your parents could understand.

Compute the derivatives of the following functions.
2. $f(x)=\sqrt{1+x^{2}}$
3. $f(\theta)=\tan (4 \theta+9)$
4. $f(t)=e^{t^{2}}(1+\cos (t))$
5. $f(v)=\sec \left(\frac{1}{1+v^{2}}\right)$
6. $f(x)=\cos \left(x^{1 / 3} e^{x}\right)$
7. $f(x)=\sqrt{x+e^{x^{2}}}$

