

Linearly approximate the following numbers. In each case, determine an appropriate function $f(x)$ and a point $(a, f(a))$ where the tangent line meets the graph. Determine if your linear approximation (also known as *local linearization*) overestimates or underestimates the true value.

1. $\tan 3.1$ (Hint: $\pi \approx 3.14$)
2. $\sqrt[3]{28}$
3. $\sqrt{9.2}$
4. $\sin 0.2$
5. $16.1^{\frac{1}{4}}$