



$f(x) = \sin(\sin x)$   
 $x_0 = 0$   
 $f(x_0) = \sin(\sin 0) = \sin 0 = 0$   
 $f'(x) = \cos(\sin x) \cdot \cos x$   
 $f'(x_0) = \cos(\sin 0) \cdot \cos 0 = \cos 0 \cdot \cos 0 = 1$   
 $f''(x) = -\sin(\sin x) \cdot \cos x - \cos(\sin x) \cdot \sin x$   
 $f''(x_0) = f''(0) = -\sin(\sin 0) \cdot \cos 0 - \cos(\sin 0) \cdot \sin 0 = 0$   
 $f'''(x) = -\sin(\sin x) \cdot \cos^2 x - \cos(\sin x) \cdot \cos x \cdot \sin x - \cos(\sin x) \cdot \cos x - \cos(\sin x) \cdot \sin x$   
 $f'''(x_0) = f'''(0) = -1 \cdot 1 + 0 - 1 - 1 = -2$   
 $T(x) = \sin(\sin x) \approx 0 + 1 \cdot x - \frac{2}{3!} x^3$

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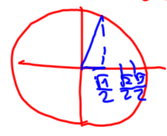
$f(x) = \sqrt{x}$   
 $x_0 = 1$   
 $f(x_0) = \sqrt{1} = 1$   
 $f'(x) = \frac{1}{2\sqrt{x}}$   
 $f'(x_0) = \frac{1}{2}$   
 $f''(x) = \left(\frac{1}{2} \cdot x^{-\frac{1}{2}}\right)' = -\frac{1}{4} x^{-\frac{3}{2}}$   
 $f''(x_0) = -\frac{1}{4} \cdot \frac{1}{\sqrt{1}} = -\frac{1}{4}$   
 $T(x) = 1 + \frac{1}{2}(x-1) - \frac{1}{8}(x-1)^2$

10 10-19:20

$f(x) = f(x_0) + f'(x_0) \cdot (x - x_0)$

$\sin 29$   
 $\sin 29^\circ = \sin 30^\circ + \cos 30^\circ \cdot (29 - 30)$   
 $\sin 29^\circ = \frac{1}{2} + \frac{\sqrt{3}}{2} \cdot (-1)$   
 $\sin 29^\circ = \frac{1}{2} - \frac{\sqrt{3}}{2}$

$(\sin x)' = \cos x$   
 $\cos 30 = \frac{\sqrt{3}}{2}$   
 $\sin 30 = \frac{1}{2}$



$\sin 29^\circ = \frac{1}{2} + \frac{\sqrt{3}}{2} \left(\frac{\pi}{180}\right)$

10 10-19:35