$f(x)=0.9x^3-1.4x^2+3x-4$

$f'(x)=2.7x^2-2.8x+3$

$f''(x)=5.4x-2.8$

$f'''(x)=5.4$

$f(0.4)=0.9(0.4)^3-1.4(0.4)^2+3(0.4)-4$

$'(0.4)=2.7(0.4)^2-2.8(0.4)+3$

$f''(0.4)=5.4(0.4)-2.8$

$f'''(0.4)=5.4$

$f(x)\approx f(0.4)+f'(0.4)(x-0.4)+\frac{f''(0.4)}{2!}(x-0.4)^2+\frac{f'''(0.4)}{3!}(x-0.4)^3$

$f(x)\approx f(0.4)+f'(0.4)(x-0.4)+\frac{f''(0.4)}{2!}(x-0.4)^2+\frac{f'''(0.4)}{3!}(x-0.4)^3$

$f(x)\approx -3.234+3.69(x-0.4)+0.81(x-0.4)^2+0.9(x-0.4)^3$

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b)

$f(0.5)=1.4e^{0.5}-3.2(0.5)+3.2$

$'(0.5)=1.4e^{0.5}-3.2$

$''(0.5)=1.4e^{0.5}$

$'''(0.5)=1.4e^{0.5}$

$(x)\approx f(0.5)+f'(0.5)(x-0.5)+\frac{f''(0.5)}{2!}(x-0.5)2+\frac{f'''(0.5)}{3!}(x-0.5)^3$

$f(x)\approx 2.108+0.7(x-0.5)+0.35(x-0.5)^2+0.2333(x-0.5)^3$