[1] Find a power series for the function, centered at *c* and determine the interval of convergence.

(a) $f(x)=\dfrac{3}{2x-1}, c=0$

(b) $f(x)=\dfrac{3}{x+2}, c=0$

(c) $g(x) = \dfrac{4x-7}{2x^2+3x-2}, c = 0$

[2] Find a power series, centered at 0, for the following functions. Identify the interval of convergence.

(a) $h(x) = \dfrac{1}{4x^2 + 1}$

(b) $f(x) = \arctan 2x$

[3] Find the Maclaurin polynomial of degree n for the function.

(a) $f(x) = xe^x, n = 4$

(b) $f(x) = \sec x, n = 2$

[4] Find the nth Taylor polynomial centered at c.

(a) $f(x) = \sqrt{x}, n = 4, c = 1$

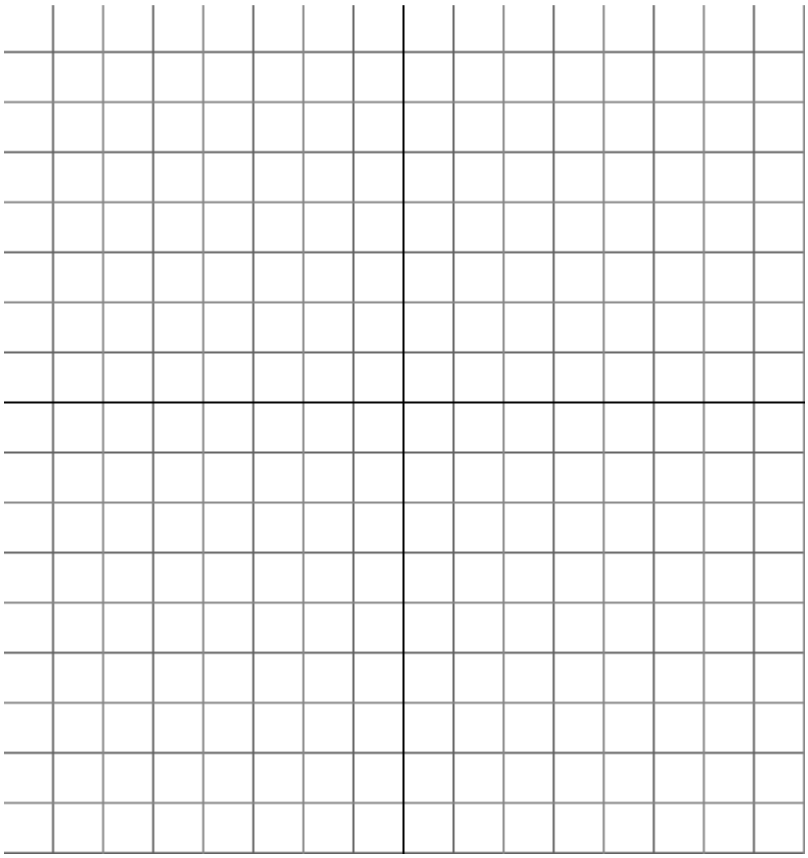
(b) $f(x) = x^2 \cos x, n = 2, c = \pi$

[5] Find the Maclaurin series for the function.

(a) $f(x) = \cos x^{3/2}$

(b) $g(x) = 2\sin x^3$

[6] Sketch the curve represented by the parametric equations(indicate the orientation of the curve), and write the corresponding rectangular equation by eliminating the parameter.



(a) $x = t^3, y = \frac{t^2}{2}$

(b) $x = \sec\theta, y = \cos\theta,\ 0 \le \theta < \frac{\pi}{2}, \frac{\pi}{2} < \theta \le \pi$