

### Answer on Question #42774 – Math – Calculus

State how many imaginary and real zeros the function has.

$$f(x) = x^3 + 5x^2 + x + 5$$

**Solution.**

$$x^3 + 5x^2 + x + 5 = 0$$

$$x(x^2 + 1) + 5(x^2 + 1) = 0$$

$$x(x^2 + 1) + 5(x^2 + 1) = 0$$

$$(x^2 + 1)(x + 5) = 0$$

So we get  $x^2 + 1 = 0$  or  $x + 5 = 0$ . Hence, the zeros of  $f(x)$  are  $x_1 = i, x_2 = -i, x_3 = -5$

**Answer.** 1 real zero  $x=-5$ , and two imaginary zeros  $x=i$  and  $x=-i$ .