Answer on Question #73116 – Math – Other

Question

USING THE BINOMIAL THEROM, DEVELOP (x+h)^-1/2 to four terms TIA :)?

Solution

$$(x+h)^{-\frac{1}{2}} = x^{-\frac{1}{2}} + \left(-\frac{1}{2}\right)x^{-\frac{3}{2}}h + \frac{1}{2!}\left(-\frac{1}{2}\right)\left(-\frac{3}{2}\right)x^{-\frac{5}{2}}h^2 +$$

$$+\frac{1}{3!}\left(-\frac{1}{2}\right)\left(-\frac{3}{2}\right)\left(-\frac{5}{2}\right)x^{-\frac{7}{2}}h^3 = x^{-\frac{1}{2}} - \frac{1}{2}x^{-\frac{3}{2}}h + \frac{3}{8}x^{-\frac{5}{2}}h^2 - \frac{5}{16}x^{-\frac{7}{2}}h^3 .$$