

ESP Workshop, Worksheet #13
Tuesday October 18, 2006
AI: Eric Katerman

1. (a) $R = 2, I = (-4, 0]$
(b) $\ln 2 + \sum_{n=1}^{\infty} \frac{(-1)^{n-1}(x-2)^n}{n2^n}$
(c) $(1+x)^{1/4} = 1 + x/4 + \sum_{n=2}^{\infty} (-1)^{n-1}(3)(7)\cdots(4n-5)x^n/(4^n n!)$
 $(1-8x)^{1/4} = 1 - 2x - \sum_{n=2}^{\infty} 2^n 3 \cdot 7 \cdots (4n-5)x^n/(n!)$
(d) Section 13.1, number 17
(e) $\langle 2, 13 \rangle, 15, \langle 0, 3 \rangle$
(f) $\cos \theta = \frac{-2}{\sqrt{42}}, \sin \theta = \frac{\sqrt{38}}{\sqrt{42}}$ (use dot product for first one, cross product for second)
(g) Section 13.5, number 35
(h) Section 13.7, number 7
2. Answer to section 12.11, number 6 (I think that's right... in any case, it's the one with the 32 in it):

$$1/2 + \sum_{n=1}^{\infty} \frac{1 \cdot 6 \cdot 11 \cdots (5n-4)}{5^n 2^{5n+1} n!} x^n$$