Exami

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THIS

t

(3) **[6 pts]** Find a
convergence.

Solution (I)

center "0" : −

Solution (II)

center "3" : −

(Both solutions

(4) **[5 pts]** Show tha

$f'(x) = \frac{-x}{\sqrt{x^2}}$

$\Rightarrow \kappa = \frac{(x}{(}$

(It is a (

(5) [5 pts
say a

$\vec{r}'(t)=$

$S=\int_{1}^{t}$

$\rightarrow$ arct

$\Rightarrow \vec{r}=\vec{r}$

$=(\mathrm{Co}$

(6) [5 pts]

Since ||

from: Thr

[Proof:

$\Longrightarrow \vec{r}$

$\Longrightarrow 2\, r$

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2

3

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$\left(-\frac{1}{2}\right.$ ∫

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$\begin{cases} 2x \\ 2y \\ 2z = \end{cases}$

(N.B. x

the s

x.

$\Rightarrow$

(1

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=

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(15) [5 p

$\iint_D x$

$= \int_{-\pi/2}^{\pi/2} ($

$= (\sin$

(16) [5 p

$\iint_D \frac{y}{1+x^2}$

$= \int_0^1$

$= \frac{1}{2}$

[illegible]