

Nombre:

Valor 70 puntos

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Integre las siguientes funciones trigonométricas inversas.

Se evaluará todo el procedimiento.

Complete los espacios en blanco.

$$1) \int \frac{x}{x^4+16} dx = \int \frac{x}{(\quad)^2+(\quad)^2} dx \quad u = \quad u' =$$

$$\frac{1}{\quad} \int \frac{x}{(\quad)^2+(\quad)^2} dx = \frac{1}{\quad} \cdot \frac{1}{\quad} \text{arc} \left(\frac{x}{\quad} \right) + c$$

$$= \frac{1}{\quad} \text{arc} \left(\frac{x}{\quad} \right) + c$$

$$2) \int \frac{x^2}{\sqrt{1-x^6}} dx = \int \frac{x^2}{\sqrt{1-(\quad)^2}} dx \quad u = x \quad u' =$$

$$\frac{1}{\quad} \int \frac{x^2}{\sqrt{1-(\quad)^2}} dx = \frac{1}{\quad} \text{arc} \left(\frac{\quad}{\quad} \right) + c$$

$$3) \int \frac{9}{16+25x^2} dx = \int \frac{9}{(\quad)^2+(\quad)^2} dx \quad u = \quad u' =$$

$$\frac{9}{\quad} \int \frac{1}{(\quad)^2+(\quad)^2} dx = \frac{9}{\quad} \cdot \frac{1}{\quad} \text{arc} \left(\frac{\quad}{\quad} \right) + c$$

$$= \frac{\quad}{\quad} \text{arc} \left(\frac{\quad}{4} \right) + c$$

$$4) \int \frac{4}{x^2-8x+25} dx = 4 \int \frac{dx}{(\quad)^2+(\quad)^2} \quad u = \quad u' =$$

$\frac{x^2 - 8x + 25}{(x^2 - 8x + \quad) + 25}$ $\frac{(x^2 - 8x + \quad) + 25 - (\quad)^2 + \quad}{(\quad)^2 + \quad}$

$$= 4 \cdot \frac{1}{\quad} \text{arc} \left(\frac{\quad}{\quad} \right) + c$$

$$= \frac{\quad}{\quad} \text{arc} \left(\frac{\quad}{3} \right) + c$$