

$$g(1/x) = \int_{1/x}^{2/x} f(u) du$$

$$= \int_{1/x}^{2/x} \frac{1}{\sqrt{1+u^4}} du$$

On pose $u = 1/v$, donc $du = -\frac{dv}{v^2}$

Donc $g(1/x) = \int_x^{2x} \frac{1}{\sqrt{1+(1/v)^4}} \times -\frac{dv}{v^2}$

$$= \int_x^{2x} \frac{1}{\sqrt{\frac{v^4+1}{v^4}}} \times -\frac{dv}{v^2}$$

$$= \int_x^{2x} \frac{v^2}{\sqrt{1+v^4}} \times -\frac{dv}{v^2} = \int_x^{2x} -\frac{dv}{\sqrt{1+v^4}} = -g(x)$$

Donc $g(1/x) = -g(x)$.