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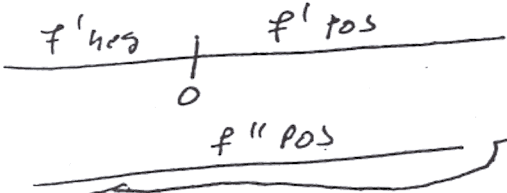
3. Find $\int \frac{1}{\sqrt{16-9x^2}} dx = \frac{1}{4} \int \frac{dx}{\sqrt{1-(\frac{3x}{4})^2}} = \frac{4}{3} \cdot \frac{1}{4} \int \frac{dy}{\sqrt{1-y^2}} = \frac{1}{3} \sin^{-1} u + C$

$u = \frac{3x}{4}$
 $du = \frac{3}{4} dx$

$= \frac{1}{3} \sin^{-1}(\frac{3x}{4}) + C$

4. Let $f(x) = e^x - x$. Where is $f(x)$ increasing, decreasing, concave up, and concave down. Find the local maxima, local minima, and points of inflection of $y = f(x)$. Graph $y = f(x)$.

$f'(x) = e^x - 1$
 $f''(x) = e^x$
 $f'(x) = 0$ when $x = 0$
 $f''(x)$ is always positive



- f is incr. for $x > 0$
- f is dec. for $x < 0$
- f is c.u. for all x
- f is never c.d.
- loc. min at $(0, 1)$
- no loc. max
- no p.o.b.i.

