[Section 8.2] Area of a surface of revolution

25. If you confuse this integral, $\int_1^\infty \frac{\sqrt{x^4+1}}{x^3}\,dx$, try comparing with $\int_1^\infty \frac{1}{x}\,dx$ instead of evaluating.

29. The ellipsoid's surface area is twice the area generated by rotating the first-quadrant portion of the ellipse about the x-axis. That is,
$S = 2\int_0^a 2\pi y\sqrt{1+[dy/dx]^2}\,dx$

36. $L = \int_a^b \sqrt{1+[f'(x)]^2}\,dx$