29

$$3 + 6 + 9 + \cdots + 93 + 96 + 99$$

$$3^1 + 3^2 + 3^3 + \cdots + 3^{33}$$

$$S = \frac{3^{33} - 1}{2(3-1)} = 2.77 \times 10^{15}$$

32

$$S\left(= \frac{10^{100} - 1}{10 - 1} \right) =$$

132

$$\log S = \log\left(10^1 \cdot 10^2 \cdot 10^3 \cdots 10^{100}\right)$$

$$= \log 10^1 + \log 10^2 + \cdots + \log 10^{100}$$

$$= 1 + 2 + \cdots + 100 \qquad \frac{100 \cdot 101}{2} = \frac{10\,0}{2}$$

$$+ 100$$

$$= 505$$

$$S = \log^{-1}(505)$$