

$$\therefore C(y) = (2y + 9)^{\frac{1}{2}} + 0.8y + 9$$

to find  $C$ :  $C(0) = 5.8$  dollars

$$5.8 = 9^{\frac{1}{2}} + 0 + 9$$

$$\rightarrow 5.8 = \frac{3}{-3} + 9 \quad \therefore \boxed{9 = 2.8}$$

so  $\boxed{C(y) = (2y + 9)^{\frac{1}{2}} + 0.8y + 2.8}$

**26** If consumption is \$3 billion when disposable income is 0\$, and if the marginal propensity

$\frac{dS}{dy} = 0.2 + e^{-1.5y}$ , find the national consumption function.

$$\rightarrow S(y) = \int 0.2 + e^{-1.5y} dy$$

$$= \int 0.2 dy + \int \frac{-1}{-1.5} e^{-1.5y} dy$$

$$= 0.2y + \frac{-1}{1.5} e^{-1.5y} + C$$

$$= 0.2y - 0.66 e^{-1.5y} + C$$

$$\textcircled{S}(0) = 3$$

$$3 = 0.2(0) - 0.66 e^0 + C \rightarrow 3 = -0.66 + C \rightarrow C = 3.66$$