

Scanned Documents

$$\int_0^1 x(\theta x^{\theta-1}) dx$$

$$\int_0^1 \theta x^{\theta} dx$$

$$\theta \int_0^1 \frac{1}{\theta+1} x^{\theta+1} dx$$

$$E[x] \text{ or } \bar{x} = \frac{\theta}{\theta+1}$$

$$\downarrow$$

$$\frac{\theta}{\theta+1} = \bar{x}$$

$$\theta = \bar{x}\theta + \bar{x}$$

$$1 = \bar{x} + \frac{\bar{x}}{\theta}$$

$$1 - \bar{x} = \frac{\bar{x}}{\theta}$$

$$\frac{1 - \bar{x}}{\bar{x}} = \frac{1}{\theta} \rightarrow \boxed{\frac{\bar{x}}{1 - \bar{x}} = \theta}$$