$\boxed{6.1:9}$

$$\int x \arcsin x \, dx = \frac{1}{2}x^2 \arcsin x - \frac{1}{2}\underbrace{\int x^2 \frac{1}{\sqrt{1-x^2}}\, dx}_{A}$$

$$A = \int \frac{x^2}{\sqrt{1-x^2}}\, dx = -\int \frac{1-x^2-1}{\sqrt{1-x^2}}\, dx =$$

$$= -\int \frac{1-x^2}{\sqrt{1-x^2}}\, dx + \int \frac{1}{\sqrt{1-x^2}}\, dx = -\int 1 \cdot \sqrt{1-x^2}\, dx + \arcsin x$$

$$= -x\sqrt{1-x^2} + \int x \frac{-2x}{2\sqrt{1-x^2}}\, dx + \arcsin x$$

$$= -x\sqrt{1-x^2} - \underbrace{\int \frac{x^2}{\sqrt{1-x^2}}}_{A} + \arcsin x$$

så

$$2A = \arcsin x - x\sqrt{1-x^2} \quad (+C)$$

$$A = \frac{1}{2}\arcsin x - \frac{1}{2}x\sqrt{1-x^2} \quad (+D)$$

dvs

$$\int x \arcsin x \, dx = \frac{1}{2}x^2 \arcsin x - \frac{1}{4}\arcsin x + \frac{1}{4}x\sqrt{1-x^2} + D$$

$$= \frac{1}{4}(2x^2-1)\arcsin x + \frac{1}{4}x\sqrt{1-x^2} + D$$