$\boxed{6.1:9}$ Alternativ lösning

$$\int x \cdot \arcsin x \, dx = \left[\begin{aligned} x &= \sin\theta \\ \frac{dx}{d\theta} &= \cos\theta \\ dx &= \cos\theta \, d\theta \end{aligned} \right] \quad -\frac{\pi}{2} < \theta < \frac{\pi}{2}$$

$$= \int \sin\theta \cdot \overset{\arcsin(\sin\theta)}{\overset{\downarrow}{\theta}} \cdot \cos\theta \, d\theta = \int \theta \cdot \frac{1}{2} \sin 2\theta \, d\theta$$

$$= \theta \cdot \frac{1}{2}(-\cos 2\theta)\frac{1}{2} - \int \frac{1}{2}(-\cos 2\theta)\frac{1}{2} \, d\theta$$

$$= -\frac{1}{4}\theta \cos 2\theta + \frac{1}{4}\int \cos 2\theta \, d\theta$$

$$= -\frac{1}{4}\theta \cos 2\theta + \frac{1}{4}\sin 2\theta \cdot \frac{1}{2} + C$$

$$= -\frac{1}{4}\theta(1 - 2\sin^2\theta) + \frac{1}{8} \cdot 2\sin\theta \overbrace{\cos\theta}^{\geq 0 \text{ då } -\frac{\pi}{2} \leq \theta \leq \frac{\pi}{2}} + C$$

$$= -\frac{1}{4}\theta + \frac{1}{2}\theta \sin^2\theta + \frac{1}{4}\sin\theta\sqrt{1 - \sin^2\theta} + C$$

$$= -\frac{1}{4}\arcsin x + \frac{1}{2}x^2 \arcsin x + \frac{1}{4}x\sqrt{1 - x^2} + C$$