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ABSTRACT. We give some elementary integrals

1. Integrals

$$\frac{\pi}{6}=\int_0^1\left(\sqrt{\frac{x}{2+x}}+\sin^{-1}\frac{1-\sqrt{1-x^2}}{2}\right)dx \tag{1}$$

$$\frac{\pi}{6}=\int_0^1\left(\sqrt{\frac{x}{2+x}}+\tan^{-1}\frac{1-\sqrt{1-x^2}}{\sqrt{2+x^2+2\sqrt{1-x^2}}}\right)dx \tag{2}$$

$$\frac{\pi}{3}=\int_0^1\left(-\sqrt{\frac{x}{2+x}}+\cos^{-1}\frac{1-\sqrt{1-x^2}}{2}\right)dx \tag{3}$$

$$\sqrt{3}-2\sinh^{-1}\frac{1}{\sqrt{2}}=\int_0^1\sqrt{\frac{x}{2+x}}\,dx \tag{4}$$

2. Elementary equation

$$\int_0^1\frac{\ln\left(\left(\cos(1-x)\right)^2+\left(\sinh x\right)^2\right)}{(1-x)^2+x^2}dx=2\int_0^1\frac{(2x-1)\tan^{-1}\left(\tan(1-x)\tanh x\right)}{(1-x)^2+x^2}dx \tag{5}$$

3. References

Boros, G. and Moll, V.H.: Irresistible Integrals , Cambridge University Press, 2004.