# Integration Problems

## Example

1. Integrate $\int_0^1 x^{-1/2} \arctan(\sqrt{x})dx$.

## Problems

2. Integrate $\int_1^{e^\pi} \sin(\ln(x))dx$.

3. Integrate $\int_0^{\pi/2} \sin(x)\cos(x)\sin(\sin(x))dx$.

4. Integrate $\int_0^1 2x^3 \sin(x^2)dx$.

5. Integrate $\displaystyle\int_0^1 \frac{\arcsin(\sqrt{x})}{2\sqrt{x}}dx$.

6. Integrate $\displaystyle\int_0^1 5x^4 \arcsin(x^5)dx$.

7. Integrate $\displaystyle\int_{\tan(1)}^{\tan(e)} \frac{\ln(\arctan(x))}{1+x^2}dx$.

8. Integrate $\displaystyle\int_{\pi/4}^{\arctan(e)} \sec^2(x)\ln(\tan(x))dx.$.