

**Choose your Path**

Determine the best method (or sequence of methods) to evaluate each integral, and integrate it.

1.  $\int \cos(x) e^{\sin x} dx$

2.  $\int_0^{2\pi} t \sin 2t dt$

3.  $\int e^{x+e^x} dx$

4.  $\int \sqrt{z} (z + \sqrt[3]{z}) dz$

5.  $\int \ln(1+x^2) dx$

$$6. \int \frac{x+a}{x^2+a^2} dx$$

$$7. \int x^5 e^{x^2} dx$$

$$8. \int \cot(x) \ln(\sin x) dx$$

$$9. \int \frac{\sqrt{x}}{x^2+x} dx$$

$$10. \int \frac{1}{x^3-8} dx$$

$$11. \int \frac{\sqrt{t}}{1+\sqrt[3]{t}} dt$$