

Warm-up problems for the Integration Bee!

1. $\int \frac{x^2 + 2x + 1}{x^4} dx$

2. $\int \frac{\sin(\sqrt{x})}{\sqrt{x}} dx$

3. $\int \frac{x^2}{\sqrt{x-1}} dx$

HINTS

1. split up into 3 fractions
2. u-sub with $u = \sqrt{x}$
3. u-sub with $u = x - 1$ then use the technique in #1