

1. Find the integral $\int t(5 - t^2)^3 dt$.

2. Find the integral $\int (12x^3 - 6x)e^{x^4 - x^2} dx$.

3. Find the integral $\int \frac{2y}{y^2 + 4} dy$.

4. At a certain factory the marginal cost is $6q + 5$ dollars per unit when the production level is q units. The overhead or fixed cost (the cost of producing no units) is \$1,000. What is the cost of producing 10 units?