



Integration by Parts Quiz

A general method of integration is **integration by parts**. The pattern is given by:

$$\int u dv = uv - \int v du$$

MULTIPLE CHOICE

Identify the letter of the choice that best completes the statement, or answers the question:

- If the integrand involves a logarithm, an inverse trigonometric function, or a tough function to integrate whose derivative is easily calculated, that function should be:
 A the dv in $\int u dv$ B the u in $\int u dv$
- If the integrand involves a polynomial multiplied by a sine or a cosine, an exponential function, or some easily-integrated function, the polynomial should be:
 A the dv in $\int u dv$ B the u in $\int u dv$
- Integration by parts is called that because
 A it is the inverse of the Product Rule for differentiation C the technique only performs a part of the original integration
 B the integrand is split into parts D it is the inverse of the Chain Rule for differentiation
- Complete: $\int x \sin x \, dx = \sin x - \underline{\hspace{2cm}} + c$, where c is a constant
 A $x \cos x$ C x
 B $\sin^2 x$ D none of the above
- Complete: $\int x \cos x \, dx = \cos x + \underline{\hspace{2cm}} + c$, where c is a constant
 A $\sin x$ C x
 B $x \sin x$ D none of the above