

Watch. Practice. Understand. | Lesson 325

Calculus 7 1 Integrating By Part

Watch the matching video: <https://www.youtube.com/watch?v=2Pmw6KZ55lc>

Practice focus: Integration by parts

Original extra practice matched to the listed lesson topic.

Name: _____ Date: _____ Show your reasoning and check units.

01 Integrate $x e^x dx$.

02 Integrate $\ln x dx$ for $x > 0$.

03 Integrate $x \cos x dx$.

04 Evaluate the integral of $x e^x$ from 0 to 1.

Worked answers | Lesson 325

Calculus 7 1 Integrating By Part

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Practice focus: Integration by parts

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01 Integrate $x e^x dx$.

Take $u=x$, $dv=e^x dx$. Result $x e^x - \int e^x dx = e^x(x-1)+C$.

02 Integrate $\ln x dx$ for $x>0$.

$u=\ln x$, $dv=dx$. Result $x \ln x - x + C$.

03 Integrate $x \cos x dx$.

$u=x$, $dv=\cos x dx$ gives $x \sin x + \cos x + C$.

04 Evaluate the integral of $x e^x$ from 0 to 1.

Use $e^x(x-1)$: at 1 gives 0, at 0 gives -1. Integral = 1.