

INKMATHS FLASHCARDS

Integration standard results

7 cards · fronts and backs

Print double-sided, flipping on the long edge, and each answer lands behind its question. Cut along the card borders.

Definitions in precise wording, the standard results the formulae booklet does not print, a check-yourself question per topic, and the slips that lose marks. The same cards run on the website with spaced-repetition scheduling, at inkmaths.co.uk/flashcards.

STANDARD RESULT

Power rule ($n \neq -1$):

$$\int x^n dx = ?$$

INTEGRATION: STANDARD RESULTS

STANDARD RESULT

The $n = -1$ case:

$$\int (1)/(x) dx = ?$$

INTEGRATION: STANDARD RESULTS

STANDARD RESULT

Exponential:

$$\int e^{kx} dx = ?$$

INTEGRATION: STANDARD RESULTS

STANDARD RESULT

Sine (x in radians):

$$\int \sin x dx = ?$$

INTEGRATION: STANDARD RESULTS

STANDARD RESULT

Cosine (x in radians):

$$\int \cos x dx = ?$$

INTEGRATION: STANDARD RESULTS

CHECK YOURSELF

Find the integral of $6e^{(3x)}$ with respect to x .

INTEGRATION: STANDARD RESULTS

SPOT THE ERROR

Say what is wrong with this claim:

The integral of $\sin x$ is $\cos x$.

INTEGRATION: STANDARD RESULTS

STANDARD RESULT

$$\int (1)/(x) \, dx = \ln|x| + c$$

INTEGRATION: STANDARD RESULTS

STANDARD RESULT

$$\int x^n \, dx = (x^{n+1})/(n+1) + c$$

INTEGRATION: STANDARD RESULTS

STANDARD RESULT

$$\int \sin x \, dx = -\cos x + c$$

INTEGRATION: STANDARD RESULTS

STANDARD RESULT

$$\int e^{kx} \, dx = (1)/(k)e^{kx} + c$$

INTEGRATION: STANDARD RESULTS

CHECK YOURSELF

$2e^{(3x)} + c$: divide by the 3 from the chain rule, and never forget the constant on an indefinite integral.

INTEGRATION: STANDARD RESULTS

STANDARD RESULT

$$\int \cos x \, dx = \sin x + c$$

INTEGRATION: STANDARD RESULTS

SPOT THE ERROR

It is $-\cos x + c$. Check by differentiating your answer: the derivative of $-\cos x$ is $\sin x$, which recovers the integrand. Differentiate-to-check catches every sign slip of this kind.

INTEGRATION: STANDARD RESULTS