

## Exercises 1b – simple integrals

Find the primitive function to the function  $f(x) = \frac{1}{\sqrt{1 - (1 - 2x)^2}}$ .  $[-\frac{1}{2} \arcsin(1 - 2x) .]$

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Find the primitive function to the function  $f(x) = \frac{1}{\sqrt{1 + 9x^2}}$ .  $[\frac{1}{3} \ln(3x + \sqrt{1 + 9x^2}) .]$

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Find the primitive function to the function  $f(x) = \sin(2x + 1)$ .  $[-\frac{1}{2} \cos(2x + 1) .]$

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Find the primitive function to the function  $f(x) = \sin(2 - 3x)$ .  $[\frac{1}{3} \cos(2 - 3x) .]$

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Find the primitive function to the function  $f(x) = \sinh(4x + 3)$ .  $[\frac{1}{4} \cosh(4x + 3) .]$

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Find the primitive function to the function  $f(x) = \cos(3x + 2)$ .  $[\frac{1}{3} \sin(3x + 2) .]$

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Find the primitive function to the function  $f(x) = \cos(3 - 2x)$ .  $[-\frac{1}{2} \sin(3 - 2x) .]$

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Find the primitive function to the function  $f(x) = \cosh(4x - 1)$ .  $[\frac{1}{4} \sinh(4x - 1) .]$

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Find the primitive function to the function  $f(x) = e^{3-2x}$ .  $[-\frac{1}{2} e^{3-2x} .]$

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Find the primitive function to the function  $f(x) = 4^{3x+4}$ .  $[\frac{4^{3x+4}}{3 \ln 4} .]$

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Find the primitive function to the function  $f(x) = 3^{1-3x}$ .  $[-\frac{3^{-3x}}{\ln 3} .]$

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Find the primitive function to the function  $f(x) = 10^{3-2x}$ .  $[-\frac{10^{3-2x}}{2 \ln 10} .]$

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Find the primitive function to the function  $f(x) = 2^{-2x+1}$ .  $[-\frac{2^{-2x}}{\ln 2} .]$

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Find the primitive function to the function  $f(x) = \frac{1}{\cos^2(2x + 1)}$ .  $[\frac{1}{2} \operatorname{tg}(2x + 1) .]$

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Find the primitive function to the function  $f(x) = \frac{1}{\cos^2(3 - 2x)}$ .  $[-\frac{1}{2} \operatorname{tg}(3 - 2x) .]$

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Find the primitive function to the function  $f(x) = \frac{1}{\sin^2(3x - 2)}$ .  $[-\frac{1}{3} \operatorname{cotg}(3x - 2) .]$

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Find the primitive function to the function  $f(x) = \frac{1}{\sin^2(4 - 2x)}$ .  $[\frac{1}{2} \operatorname{cotg}(4 - 2x) .]$

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Find the primitive function to the function  $f(x) = \frac{1}{1 + (2x - 1)^2}$ .  $[\frac{1}{2} \operatorname{arctg}(2x - 1) .]$

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Find the primitive function to the function  $f(x) = \frac{1}{1 + (2 - 3x)^2}$ .  $[-\frac{1}{3} \operatorname{arctg}(2 - 3x) .]$

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Find the primitive function to the function  $f(x) = (3x + 4)^{10}$ .  $[\frac{1}{33} (3x + 4)^{11} .]$

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Find the primitive function to the function  $f(x) = (3 - 2x)^8$ .  $[-\frac{1}{18} (3 - 2x)^9 .]$

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Find the primitive function to the function $f(x) = (1 - 4x)^5$ .	$[-\frac{1}{24} (1 - 4x)^6 .]$
Find the primitive function to the function $f(x) = \sqrt{3x + 1}$ .	$[\frac{2}{9} (3x + 1)^{3/2} .]$
Find the primitive function to the function $f(x) = \sqrt{3 - 2x}$ .	$[-\frac{1}{3} (3 - 2x)^{3/2} .]$
Find the primitive function to the function $f(x) = \frac{1}{\sqrt{4x + 3}}$ .	$[\frac{1}{2} \sqrt{4x + 3} .]$
Find the primitive function to the function $f(x) = \frac{1}{\sqrt{2 - 3x}}$ .	$[-\frac{2}{3} \sqrt{2 - 3x} .]$
Find the primitive function to the function $f(x) = \frac{2}{\sqrt{(4x - 5)^3}}$ .	$[-\frac{1}{\sqrt{4x - 5}} .]$
Find the primitive function to the function $f(x) = \frac{3}{2 - 3x}$ .	$[-\ln  2 - 3x  .]$
Find the primitive function to the function $f(x) = \frac{1}{2x - 5}$ .	$[\frac{1}{2} \ln  2x - 5  .]$
Find the primitive function to the function $f(x) = \frac{2}{(4x - 5)^2}$ .	$[-\frac{1}{2(4x - 5)} .]$
Find the primitive function to the function $f(x) = \frac{3}{(4 - 3x)^2}$ .	$[\frac{1}{4 - 3x} .]$
Find the primitive function to the function $f(x) = \frac{1}{\sqrt[3]{(2x - 5)^2}}$ .	$[\frac{3}{2} \sqrt[3]{2x - 5} .]$
Find the primitive function to the function $f(x) = \frac{2}{(4 - 3x)^3}$ .	$[\frac{1}{3(4 - 3x)^2} .]$
Find the primitive function to the function $f(x) = \frac{1}{(4x + 1)^3}$ .	$[-\frac{1}{8(4x + 1)^2} .]$
Find the primitive function to the function $f(x) = \frac{1}{(1 - 2x)^4}$ .	$[\frac{1}{6(1 - 2x)^3} .]$
Find the primitive function to the function $f(x) = \frac{1}{\sqrt{4x^2 - 1}}$ .	$[\frac{1}{2} \ln(2x + \sqrt{4x^2 - 1}) .]$