Methods of integration

Simpson's rule (1)

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Simpson's rate (1)

QUESTION **1** Use Simpson's rule with the three given function values to approximate $\int_a^b f(x) dx$

a

Х	0	0.5	1
<i>f</i> (<i>x</i>)	1	1.65	2.72

b

Х	1	2	3
f(x)	0	0.7	1.1

QUESTION **2** Use Simpson's rule, with three function values, to approximate to one decimal place:

$$\mathbf{a} \quad \int_{1}^{2} \, 2^{x} \, dx$$

$$\mathbf{b} \quad \int_1^5 \frac{1}{x} \, dx$$

QUESTION **3** Use Simpson's rule, with five function values, to approximate $\int_0^2 \sqrt{x^2 + 4} dx$

Methods of integration

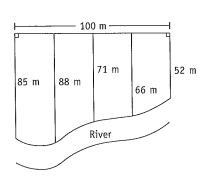
Simpson's rule (2)

QUESTION **1** Use Simpson's rule and the table of values to estimate $\int_1^3 f(x)dx$

Х	1	1.5	2	2.5	3
f(x)	1	0.71	0.5	0.35	0.25

QUESTION 2	Use Simpson's rule with 7 function values to approximate	$\int_{1}^{2.5}$	$3^{-x} dx$	to two	decimal	places
QUESTION 2	Use Simpson's rule with 7 function values to approximate	$\int_{1}^{2.5}$	$3^{-x} dx$	to two	decimal	place

QUESTION $\bf 3$ The diagram shows a paddock, bounded on one side by a river. Use the given measurements and Simpson's rule to approximate the area of the paddock. Give the answer to the nearest m^2 .



WORKBOO!