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The Trapezium Rule

(Gaeaf 2005)

1. Use the Trapezium Rule with five ordinates to find an approximate value for

$$\int_0^1 \sqrt{1+x^3}\ \mathrm{d}x.$$

Show your working and give your answer correct to two decimal places. [4]

(Haf 2005)

1. Use the Trapezium Rule with six ordinates to find an approximate value for

$$\int_0^1 \sqrt{1+x^2}\ \mathrm{d}x\ .$$

Show your working and give your answer correct to three decimal places. [4]

(Gaeaf 2006)

1. Use the Trapezium Rule with six ordinates to find an approximate value for the integral

$$\int_0^1 \frac{1}{2+x^3}\ \mathrm{d}x.$$

Show your working and give your answer correct to four significant figures. [4]

(Haf 2006)

1. Use the Trapezium Rule with five ordinates to find an approximate value for the integral

$$\int_0^{0\cdot4} \sqrt{1+x^4}\ \mathrm{d}x.$$

Show your working and give your answer correct to three decimal places. [4]

(Gaeaf 2007)

1. Use the Trapezium Rule with five ordinates to find an approximate value for

$$\int_1^2 \sqrt{2+x^3}\ \mathrm{d}x.$$

Show your working and give your answer correct to three decimal places. [4]

(Haf 2007)

1. Use the Trapezium Rule with five ordinates to find an approximate value for the integral

$$\int_0^{\frac{\pi}{2}} \sqrt{1+\sin x}\ \mathrm{d}x\ ,$$

giving the value correct to three decimal places. [4]

(Gaeaf 2008)

1. Use the Trapezium Rule with five ordinates to find an approximate value for the integral

$$\int_0^1 \frac{1}{\sqrt{2+x^3}}\,\mathrm{d}x.$$

Show your working and give your answer correct to three decimal places. [4]

(Haf 2008)

1. Use the Trapezium Rule with **four** ordinates to find an approximate value for the integral

$$\int_0^{0.6} \left(1+x^2\right)^{\frac{3}{2}}\,\mathrm{d}x.$$

Show your working and give your answer correct to three decimal places. [4]

(Gaeaf 2009)

1. Use the Trapezium Rule with five ordinates to find an approximate value for the integral

$$\int_0^1 \frac{1}{1+x^4}\,\mathrm{d}x\ .$$

Show your working and give your answer correct to three decimal places. [4]

(Haf 2009)

1. Use the Trapezium Rule with five ordinates to find an approximate value for the integral

$$\int_0^{0.4} \frac{1}{2+\sqrt{x}}\,\mathrm{d}x.$$

Show your working and give your answer correct to three decimal places. [4]

(Gaeaf 2010)

1. Use the Trapezium Rule with five ordinates to find an approximate value for the integral

$$\int_1^{1.4} \sqrt{3-x^2}\,\mathrm{d}x\ .$$

Show your working and give your answer correct to three decimal places. [4]

(Haf 2010)

1. Use the Trapezium Rule with five ordinates to find an approximate value for the integral

$$\int_1^2 \sqrt{1+\frac{1}{x}}\,\mathrm{d}x.$$

Show your working and give your answer correct to three decimal places. [4]

(Gaeaf 2011)

1. Use the Trapezium Rule with five ordinates to find an approximate value for the integral

$$\int_1^2 \sqrt{4+x^3}\,\mathrm{d}x.$$

Show your working and give your answer correct to three decimal places. [4]

(Haf 2011)

1. Use the Trapezium Rule with five ordinates to find an approximate value for the integral

$$\int_{1\cdot6}^2 \frac{1}{9-x^3}\mathrm{d}x.$$

Show your working and give your answer correct to three decimal places. [4]

(Gaeaf 2012)

1. Use the Trapezium Rule with five ordinates to find an approximate value for the integral

$$\int_1^3 \frac{x}{1+\sqrt{x}}\,\mathrm{d}x.$$

Show your working and give your answer correct to three decimal places. [4]

(Haf 2012)

1. Use the Trapezium Rule with five ordinates to find an approximate value for the integral

$$\int_1^2 \frac{1}{\sqrt{5-x^2}}\,\mathrm{d}x.$$

Show your working and give your answer correct to four decimal places. [4]

(Gaeaf 2013)

1. Use the Trapezium Rule with five ordinates to find an approximate value for the integral

$$\int_0^2 \sqrt{10-x^3}\,\mathrm{d}x.$$

Show your working and give your answer correct to four decimal places. [4]

(Haf 2013)

1. Use the Trapezium Rule with five ordinates to find an approximate value for the integral

$$\int_0^2 \frac{1}{2+x^3}\,\mathrm{d}x.$$

Show your working and give your answer correct to three decimal places. [4]

(Gaeaf 2014)

1. Use the Trapezium Rule with five ordinates to find an approximate value for the integral

$$\int_2^4 \sqrt{1+\frac{6}{x}}\,\mathrm{d}x.$$

Show your working and give your answer correct to three decimal places. [4]

(Haf 2014)

1. *(a)* Use the Trapezium Rule with five ordinates to find an approximate value for the integral

$$\int_1^3 \log_{10}(3x-1)\,\mathrm{d}x.$$

Show your working and give your answer correct to three decimal places. [4]

(b) **Use your answer to part *(a)*** to deduce an approximate value for the integral

$$\int_1^3 \log_{10}(3x-1)^2\,\mathrm{d}x.$$ [1]

(Haf 2015)

1. Use the Trapezium Rule with five ordinates to find an approximate value for the integral

$$\int_1^3 \frac{x}{10-\sqrt{x}}\,\mathrm{d}x.$$

Show your working and give your answer correct to four decimal places. [4]

(Haf 2016)

1. Use the Trapezium Rule with five ordinates to find an approximate value for the integral

$$\int_3^6 \frac{7-\sqrt{x}}{7+\sqrt{x}}\,\mathrm{d}x\,.$$

Show your working and give your answer correct to three decimal places. [4]

(Haf 2017)

1. Use the Trapezium Rule with five ordinates to find an approximate value for the integral

$$\int_0^2 \sqrt{7-x^2}\,\mathrm{d}x\,.$$

Show your working and give your answer correct to three decimal places. [4]

(Haf 2018)

1. *(a)* Use the Trapezium Rule with five ordinates to find an approximate value for the integral

$$\int_1^4 \log_{10}(6x-1)\,\mathrm{d}x\,.$$

Show your working and give your answer correct to three decimal places. [4]

(b) **Use your answer to part *(a)*** to deduce an approximate value for the integral

$$\int_1^4 \log_{10}\sqrt{(6x-1)}\,\mathrm{d}x\,.$$ [1]