

Home Gameboard

Maths

Functions G

General Functions

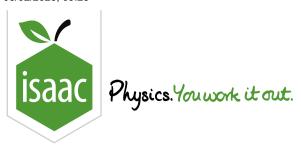
Exponential Equation 1

Exponential Equation 1



Solve the following for y: $4^y = 8^{y+1}$

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Maths

Functions

General Functions

Exponential Equation 2

Exponential Equation 2

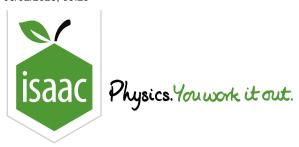


Solve the following for
$$x$$
: $3^x = \frac{1}{\left(9^{x-\frac{9}{4}}\right)}$

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Maths

Functions

General Functions

Exponential Equation 3

Exponential Equation 3



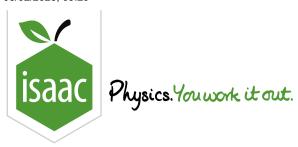
Solve the following for m: $\frac{1}{9^m}=27^{1-m}$.

$$rac{1}{\Omega^m}=27^{1-m}.$$

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<u>Home</u> <u>Gameboard</u> Maths Log Laws 2ii

Log Laws 2ii



Part A Express as a single log (i)

Express $\log_a 2 \, + \, \log_a 3$ as a single logarithm.

The following symbols may be useful: a, log()

Part B Express as a single log (ii)

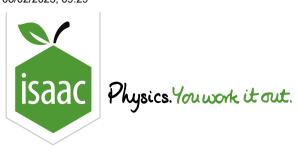
Express $2\log_{10}x \, - \, 3\log_{10}y$ as a single logarithm.

The following symbols may be useful: log(), x, y

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Log Laws 1ii

Log Laws 1ii



Part A Express in terms of $\log_2(x)$ (i)

Maths

Express $\log_2(x^2)$ in terms of $\log_2(x)$.

When you are entering your answer, note that $\log_a b$ can be written using $\log(\mathrm{b,a})$.

The following symbols may be useful: ln(), log(), x

Part B Express in terms of $\log_2(x)$ (ii)

Express $\log_2(8x^2)$ in terms of $\log_2(x)$.

When you are entering your answer, note that $\log_a b$ can be written using $\log(b,a)$.

The following symbols may be useful: ln(), log(), x

Part C Find $\log_3 y$

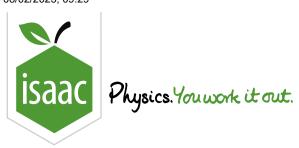
Given that $y^2 = 27$, find the value of $\log_3 y$.

The following symbols may be useful: ln(), log(), y

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Maths

Solving Equations & Logs 1ii

Solving Equations & Logs 1ii



Part A Solve equation (i)

Use logarithms to solve the equation $5^{x-1}=120$ for x, giving your answer correct to 3 significant figures.

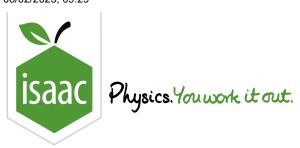
Part B Solve equation (ii)

Solve the equation $\log_2 x + 2\log_2 3 = \log_2(x+5)$. Give the value of x correct to 3 significant figures.

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Maths

Solving Equations & Logs 3ii

Solving Equations & Logs 3ii



Part A Express log

Express $\log_3(4x+7) - \log_3 x$ as a single logarithm.

When you are entering your answer, note that $\log_a b$ can be written using $\log(b,a)$.

The following symbols may be useful: ln(), log(), x

Part B Solve equation

Hence solve the equation $\log_3(4x+7) - \log_3 x = 2$. Give your answer in decimal form.

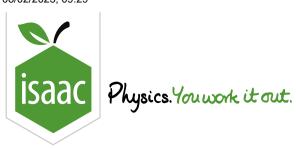
Part C Use logs

Use logarithms to solve the equation $7^x = 2^{x+1}$, giving the value of x correct to 3 significant figures.

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Maths

Log Laws 1i

Log Laws 1i



Part A Log laws

Given that $\log_a(x) = p$ and $\log_a(y) = q$, express $\log_a(xy)$ in terms of p and q.

The following symbols may be useful: p, q

Part B Simplify 1

Given that $\log_a(x) = p$ and $\log_a(y) = q$, express $\log_a(rac{a^2x^3}{y})$ in terms of p and q.

The following symbols may be useful: p, q

Part C Simplify 2

Express $\log_{10}(x^2-10)-\log_{10}x$ as a single logarithm.

When you are entering your answer, note that $\log_a b$ can be written using $\log(b,a)$.

The following symbols may be useful: log(), x

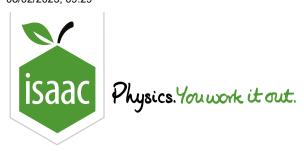
Part D Solve equation

Solve the equation $\log_{10}(x^2-10)-\log_{10}x=2\log_{10}3$. Write down the value of x.

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Maths

Log Laws 1i

Log Laws 1i



It is given that $\ln x = p + 2$ and $\ln y = 3p$

Part A Log laws

Express ln(xy) in terms of p.

The following symbols may be useful: p

Part B Simplify 1

Express $\ln(x^3)$ in terms of p.

The following symbols may be useful: p

Part C Simplify 2

Express $\ln(\frac{y}{e})$ in terms of p.

The following symbols may be useful: p

Part D Solve equation

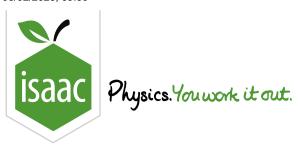
Express y in terms of x and e, simplifying your answer.

The following symbols may be useful: e, x, y

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Maths

Solving Equations & Logs 3i

Solving Equations & Logs 3i



Part A Solve equation

Solve the equation $2^{4x-1}=3^{5-2x}$, giving your answer in the form $x=rac{\log_{10}a}{\log_{10}b}$.

When you are entering your answer, note that $\log_a b$ can be written using $\log(b,a)$.

The following symbols may be useful: log(), x

Part B Find integer

Find the smallest integer n which satisfies the inequality $7^{2n}>e^{600}$.

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