

SQA Past paper questions

2023 - Paper 1 - Question 3

Solve $\log_5 x - \log_5 3 = 2$. 3

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2022 - Paper 1 - Question 8

Solve $\log_6 x + \log_6 (x+5) = 2$, where $x > 0$. 4

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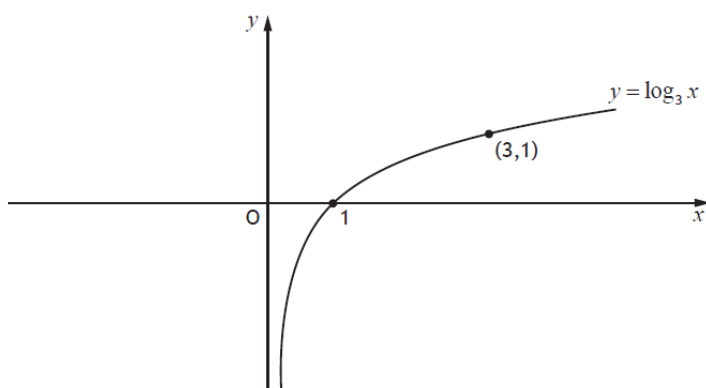
2019 - Paper 1 - Question 14

(a) Evaluate $\log_{10} 4 + 2\log_{10} 5$. 3

(b) Solve $\log_2 (7x-2) - \log_2 3 = 5$, $x \geq 1$. 3

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2018 - Paper 1 - Question 11

The diagram shows the curve with equation $y = \log_3 x$.

(a) On the diagram in your answer booklet, sketch the curve with equation $y = 1 - \log_3 x$. 2

(b) Determine the exact value of the x -coordinate of the point of intersection of the two curves. 3

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2017 - Paper 1 - Question 12

Given that $\log_a 36 - \log_a 4 = \frac{1}{2}$, find the value of a . 3

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2016 - Paper 1 - Question 14

(a) Evaluate $\log_5 25$. 1

(b) Hence solve $\log_4 x + \log_4 (x - 6) = \log_5 25$, where $x > 6$. 5

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2015 - Paper 1 - Question 23

Solve $\log_2(3x + 7) = 3 + \log_2(x - 1)$, $x > 1$. 4

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2013 - Paper 2 - Question 5

Solve the equation

$\log_5(3 - 2x) + \log_5(2 + x) = 1$, where x is a real number. 4

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2009 - Paper 2 - Question 3

(a) (i) Show that $x = 1$ is a root of $x^3 + 8x^2 + 11x - 20 = 0$. 4

(ii) Hence factorise $x^3 + 8x^2 + 11x - 20$ fully.

(b) Solve $\log_2(x + 3) + \log_2(x^2 + 5x - 4) = 3$. 5

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2008 - Paper 1 - Question 23

Functions f , g and h are defined on suitable domains by

$$f(x) = x^2 - x + 10, g(x) = 5 - x \text{ and } h(x) = \log_2 x.$$

(a) Find expressions for $h(f(x))$ and $h(g(x))$. 3

(b) Hence solve $h(f(x)) - h(g(x)) = 3$. 5

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Specimen 1 - Paper 1 - Question 22

$$\text{Solve the equation } \log_x 8 + \log_x 4 = 5. \quad 4$$

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2007 - Paper 2 - Question 8

The curve with equation $y = \log_3(x - 1) - 2.2$, where $x > 1$, cuts the x -axis at the point $(a, 0)$.

Find the value of a . 4

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2005 - Paper 2 - Question 7

$$\text{Solve the equation } \log_4(5 - x) - \log_4(3 - x) = 2, x < 3. \quad 4$$

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2004 - Paper 1 - Question 9

$$\text{Solve the equation } \log_2(x + 1) - 2\log_2(3) = 3. \quad 4$$

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2002 - Paper 2 - Question 7

Find the x -coordinate of the point where the graph of the curve with equation $y = \log_3 (x - 2) + 1$ intersects the x -axis.

3

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2001 - Paper 1 - Question 8

Find x if $4 \log_x 6 - 2 \log_x 4 = 1$.

3

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