

Year 13 (AL)

Weekly Tutorial 01

mathsalpha.com

1. Express the following as partial fractions.

a) $\frac{x+1}{(2x+1)(x-1)(x+2)}$

b) $\frac{x+3}{x^3-x^2-4x+4}$

2. Solve. $|2x + 3| = 5 - x$

3. Solve. $|3x - 5| > x + 3$

4. $g(x) = \frac{2x+5}{x-3}, x \geq 5$

a) Find $gg(5)$

c) Find g^{-1} , Stating its domain.

b) State the range of g .

(AL / Edexcel / 2018)

5. Given that $a > b > 0$ and that a and b satisfy the equation,

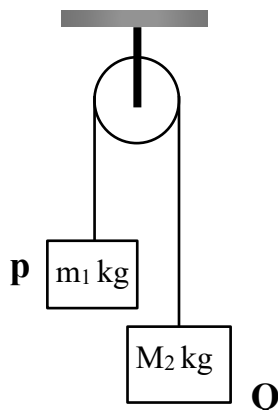
$$\log a - \log b = \log(a - b)$$

a) Show that $a = \frac{b^2}{b-1}$

b) Write down the full restriction on the value of b , explaining the reason for this restriction.

(AL / Edexcel / 2019)

6.



Consider $m_2 > m_1$

Particles P and Q are connected by a light inextensible string passing over a smooth pulley.

Mass of P is m_1 kg and mass of Q is m_2 . The particles are released from rest and the systems moves freely under gravity. Find the acceleration of each particle and the tension in the string.

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