



## Logarithm Algebra (Product Property) - To Quadratic (Coefficient N)

$$1 \log_8(-1n - 3) + \log_8(-1n - 1) = \log_8(3)$$

Use the product rule to simplify this to a quadratic of variable 'n'

A  
 $n^2 + 6n - 2 = 0$

B  
 $2n^2 + 5n - 1 = 0$

C  
 $n^2 + 4n + 0 = 0$

$$2 \log_{10}(-1n + 3) + \log_{10}(-1n + 4) = \log_{10}(2)$$

Use the product rule to simplify this to a quadratic of variable 'n'

A  
 $2n^2 - 8n + 11 = 0$

B  
 $n^2 - 7n + 10 = 0$

C  
 $2n^2 - 7n + 10 = 0$

$$3 \log_8(r - 6) + \log_8(r - 7) = \log_8(6)$$

Use the product rule to simplify this to a quadratic of variable 'r'

A  
 $2r^2 - 14r + 39 = 0$

B  
 $2r^2 - 11r + 37 = 0$

C  
 $r^2 - 13r + 36 = 0$

$$4 \log_2(-4z - 4) + \log_2(-1z - 2) = \log_2(8)$$

Use the product rule to simplify this to a quadratic of variable 'z'

A  
 $5z^2 + 12z + 4 = 0$

B  
 $3z^2 + 12z + 2 = 0$

C  
 $4z^2 + 12z + 0 = 0$

$$5 \log_2(x + 1) + \log_2(-1x + 7) = \log_2(7)$$

Use the product rule to simplify this to a quadratic of variable 'x'

A  
 $x^2 + 5x - 2 = 0$

B  
 $-1x^2 + 6x + 0 = 0$

C  
 $-1x^2 + 6x + 1 = 0$

$$6 \log_4(2w - 1) + \log_4(2w + 3) = \log_4(5)$$

Use the product rule to simplify this to a quadratic of variable 'w'

A  
 $3w^2 + 6w - 9 = 0$

B  
 $4w^2 + 4w - 8 = 0$

C  
 $5w^2 + 6w - 10 = 0$

$$7 \log_3(-1r - 3) + \log_3(-1r - 2) = \log_3(6)$$

Use the product rule to simplify this to a quadratic of variable 'r'

A  
 $r^2 + 5r + 0 = 0$

B  
 $2r^2 + 4r + 4 = 0$

C  
 $r^2 + 7r + 4 = 0$

$$8 \log_7(6r + 2) + \log_7(-3r + 1) = \log_7(2)$$

Use the product rule to simplify this to a quadratic of variable 'r'

A  
 $-18r^2 - 2r + 2 = 0$

B  
 $-18r^2 + 0r + 0 = 0$

C  
 $-17r^2 - 1r + 2 = 0$