

Exam Worksheet 2

1. Solve for x :

$$\log_2(x + 1) - \log_2(x - 4) = \log_2 3.$$

2. Given the formula

$$x = a \left(t - \frac{\pi h^2}{5} \right),$$

evaluate x when $a = 2.1 \times 10^{-3}$, $t = 3.2 \times 10^6$ and $h = 6.7 \times 10^3$.

3. Show that the following quadratic function has no real roots:

$$q(x) = 3x^2 + 4x + 9.$$

4. Use the data in the following table to find values for k and n in the relationship

$$H = \frac{k}{\sqrt{T}} + n.$$

T	100	400
H	52	35

5. Show that 3 is the only real root of the cubic function:

$$h(x) = 3x^3 - 11x^2 + 10x - 12.$$

6. A line passes through the point $(10, -2.4 \times 10^{-2})$ and has slope 0.6. Find the value of x when $y = 84.6 \times 10^{-2}$.