

Show your work. You can never show too much work.

1. Evaluate $\log_3 \sqrt[4]{27}$. ____2A

2. Evaluate $\log_5 625 + \log_2 32$. ____2A

3. Solve $x = \log_6 75.8$ for x . Round your answer to two decimal places. ____2A

4. Solve $3^{x-8} = 9^{3x+1}$ ____3A

5. Solve $\log_7(3x-2)=1$. State the restricted domain. ____3A

6. Solve $\log_9 x + \log_9 6 = 3 \log_9 4 + \log_9 3$ for x . State the restricted domain. ____4A

7. Solve $\log_3(2x+1) = \log_3 5 - \log_3 4$. State the restricted domain. ____4A

8. Solve $\log(x + 7) + \log(x - 6) = \log(3x - 7)$. State the restricted domain. ____4A

9. Solve $4^{x-5} = 17^{2x}$ to 3 decimal places. ____4A

10. The half-life formula is $A(t) = A_0 \left(\frac{1}{2} \right)^{\frac{t}{H}}$. If a 600g sample of a radio-active substance has a half-life of 9.3 years.
How many years will it take for the sample to shrink to 60 grams?

____3A