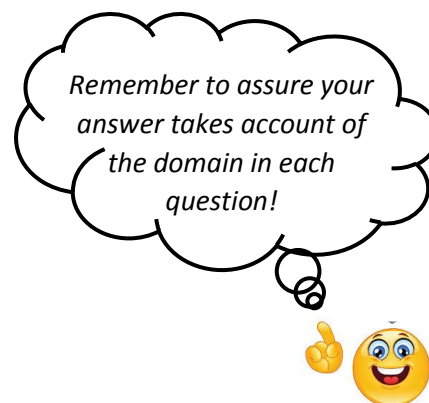The skills in this series of worksheets appear frequently.

These are the GIFTS you must take to succeed

Logarithmic Equations

Solve for x in each:

1. $\log_a 6 + \log_a x = \log_a 12$

2. $\log_a 4x - \log_a 3 = \log_a 8$

3. $\log_a x + 2\log_a 4 = \log_a 80$

4. $\frac{1}{2}\log_2 x + \log_2 5 = \log_2 10$

5. $\log_a 81 - 3\log_a x = \log_a 3$

6. $\log_a(x + 1) + \log_a(x - 1) = \log_a 8$

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

8. $\log_9(2x + 5) - \log_9(x - 5) = \log_9 \frac{x}{2}$

9. $\log_5(x + 1) + \log_5(x - 3) = 1$

10. $\log_7(x^2 - 1) - \log_7(x - 1) = 2$

Remember to assure your answer takes account of the domain in each question!

APPLYING QUESTIONS

1. Find the *x*-coordinate of the point where the graph of the curve with equation
$y = log_3(x - 4) + 2$ intersects the *x*-axis.

2. Solve: $6\log_x 2 - 2\log_x 4 = 1$