**12.2 & 12.3 Quiz Review Worksheet Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**SHOW ALL WORK AND ANSWERS ON SEPARATE PAPER.**

**Find the value of x.**

1. $log\_{15}15=x$
2. $log\_{4}x=3$
3. $log\_{x}\frac{1}{16}=-2$
4. $log\_{49}x=1$
5. $log\_{144}x=\frac{1}{2}$
6. $log\_{x}81=4$

**Expand each expression.**

1. $log\_{2}\frac{y}{5}$
2. $log\_{9}4x^{2}$
3. $log\_{7}\frac{1}{2}ab^{3}$
4. $log\_{3}\frac{2}{c^{2}d}$

**Condense each expression.**

1. $log\_{3}8-log\_{3}x$
2. $log\_{7}4+2log\_{7}g-3log\_{7}h$
3. $2log\_{5}2+\frac{1}{2}log\_{5}z$

**Solve each equation. Check for extraneous solutions.**

1. $log\_{5}\left(6-2x\right)=log\_{5}\left(x-6\right)$
2. $log\_{3}\left(x^{2}-12\right)=log\_{3}4x$