

1. Without your calculator, fill in the missing information.

Original Equation	Transformations	New Equation	New Equation		End Behavior
			Domain	Range	
$f(x) = \log(x)$	right 5, down 6				
$f(x) = \log(x)$	left 3, up 6, reflect over x-axis				
$f(x) = \log(x)$	_____, vertical stretch of 2		$(9, \infty)$	$(-\infty, \infty)$	
$f(x) = \log(x-5) - 2$	left 8, up 5				
	left 3, down 4	$y = -\log(x+6) - 8$			
$f(x) = \log(x) + 2$		$f(x) = 5\log(x-6) - 5$			

2. Which function has an end behavior of $\lim_{x \rightarrow \infty} f(x) = -\infty$ $\lim_{x \rightarrow -5} f(x) = \infty$

A. $f(x) = \log(x) - 5$

B. $f(x) = \log(x + 5)$

C. $f(x) = -\log(x + 5) - 2$

D. $f(x) = \log(x - 5)$

Solve each equation. Remember to check your solution.

3. $\log(3x) = \log(12)$

4. $\log(5x - 4) = \log(2x + 3)$

5. $\log(x + 6) = \log(2x + 3)$

6. $\log(x^2) = \log(16)$

7. $\log(x^2) = \log(2x + 8)$

8. $\log(x^2) = \log(7x - 12)$