

Quarter 2 Spiral Review 1 Math II

1. Solve the logarithmic equation:  $\log_5(2x - 9) = 2$

2. Find the equation for the inverse function:  $f(x) = -\frac{2}{3}x + 8$

3. Identify the domain and range of the given function in interval notation:  $f(x) = \sqrt{x - 4} - 3$

4. Solve the exponential equation:  $64^{2x+1} = 16^x$

5. Write the transformed equation after the given transformations of the parent function  $f(x) = 3^x$ :

{horizontal shift right 8; vertical shift up 1; vertical compression by factor 0.5}

6. The maximum load that a cylindrical column with a circular cross section can hold varies directly as the fourth power of the diameter and inversely as the square of the height. A 9 meter column 2 meters in diameter will support 64 metric tons. How many metric tons can be supported by a column 9 meters high and 3 meters in diameter?

7. Simplify:  $\sqrt{63x^2y^9}$

8. Simplify:  $\left(\frac{81x^{-8}}{196y^2}\right)^{-\frac{1}{2}}$

9. Solve the literal equation for  $m$ :  $f = \frac{7m-9}{3}$

10. What is the equation for the horizontal asymptote of the exponential function:  $f(x) = 4^{x-2} - 7$