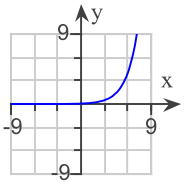
Student: _____	**Instructor:** Fred Khoury	**Assignment:** Quiz Sec 1.7
Date: _____	**Course:** Math 2312-1000 Precalculus (Fall - 2015)	
Time: _____	**Book:** Lial: College Algebra and Trigonometry, 4e	

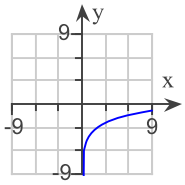
1. Graph the function. Give the domain and range.

$f(x) = \log_2(x - 4)$

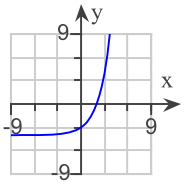
A. domain: $(-\infty,\infty)$
range: $(0,\infty)$



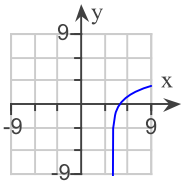
B. domain: $(0,\infty)$
range: $(-\infty,\infty)$



C. domain: $(-\infty,\infty)$
range: $(-4,\infty)$



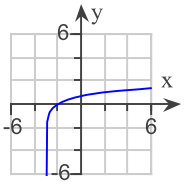
D. domain: $(4,\infty)$
range: $(-\infty,\infty)$



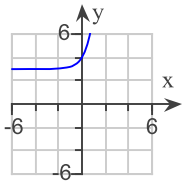
2. Graph the function. Give the domain and range.

$f(x) = \log_5 x + 3$

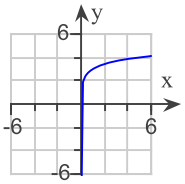
A. domain: $(-3,\infty)$
range: $(-\infty,0)$



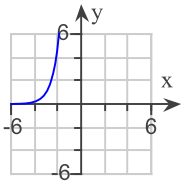
B. domain: $(-\infty,\infty)$
range: $(3,\infty)$



C. domain: $(0,\infty)$
range: $(-\infty,\infty)$



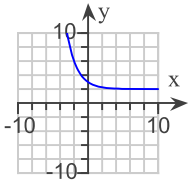
D. domain: $(-\infty,0)$
range: $(-\infty,\infty)$



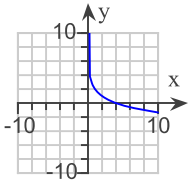
3. Graph the function. Give the domain and range.

$f(x) = \log_{1/2}(x + 2)$

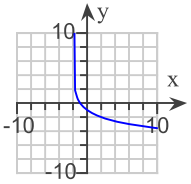
A. domain: $(-\infty,\infty)$
range: $(2,\infty)$



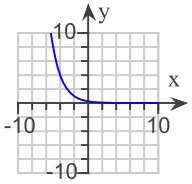
B. domain: $(0,\infty)$
range: $(-\infty,\infty)$



C. domain: $(-2,\infty)$
range: $(-\infty,\infty)$



D. domain: $(-\infty,\infty)$
range: $(0,\infty)$



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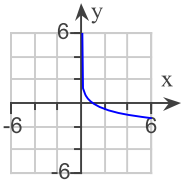
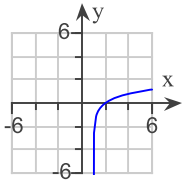
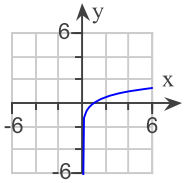
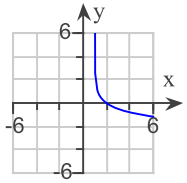
4. Match the function with its graph.

$f(x) = \log_4 x$

A. 

B. 

C. 

D. 

5. Write the expression as a sum, difference, or product of logarithms. Assume that all variables represent positive real numbers.

$\log_b\left(\frac{m^2p^6}{n^5b^9}\right)$

A. $2\log_b m + 6\log_b p - 5\log_b n - 9$

B. $2\log_b m + 6\log_b p - 5\log_b n + 9$

C. $\log_b m^2 + \log_b p^6 + \log_b n^5 - \log_b b^9$

D. $m^2p^6 - n^5b^9$

6. Write the expression as a sum, difference, or product of logarithms. Assume that all variables represent positive real numbers.

$\log_b \sqrt[3]{\frac{x^4}{y^2z^8}}$

A. $4\log_b x - 2\log_b y - 8\log_b z$

B. $\frac{4}{3}\log_b x \div \left(\frac{2}{3}\log_b y \cdot \frac{8}{3}\log_b z\right)$

C. $\frac{4}{3}\log_b x - \frac{2}{3}\log_b y - \frac{8}{3}\log_b z$

D. $\frac{1}{3}\log_b x^4 - \log_b y^2 - \log_b z^8$

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7. Use the product, quotient, and power rules of logarithms to rewrite the expression as a single logarithm. Assume that all variables represent positive real numbers.

$$\frac{1}{2}\log_2 x^4 + \frac{1}{4}\log_2 x^4 - \frac{1}{6}\log_2 x$$

A. $\log_2(x^{17/6})$

B. $\log_2(x^7)$

C. $\frac{7}{6}\log_2(x^8)$

D. $\log_2(x^{9/2})$

8. Use the product, quotient, and power rules of logarithms to rewrite the expression as a single logarithm. Assume that all variables represent positive real numbers.

$$6\log_6(4x+6) + 3\log_6(3x-2)$$

A. $\log_6\left((4x+6)^6(3x-2)^3\right)$

B. $\log_6 \frac{(4x+6)^6}{(3x-2)^3}$

C. $18\log_6((4x+6)(3x-2))$

D. $\log_6\left((4x+6)^6 + (3x-2)^3\right)$

9. Use the product, quotient, and power rules of logarithms to rewrite the expression as a single logarithm. Assume that all variables represent positive real numbers.

$$\frac{1}{3}\log_3(x^6) + \frac{1}{6}\log_3(x^6) - \frac{1}{9}\log_3 x$$

A. $\log_3(x^{9/2})$

B. $\log_3(x^7)$

C. $\frac{7}{9}\log_3(x^{12})$

D. $\log_3(x^{26/9})$