MATH 5 SN Name_____

LOGARITHMS MULTIPLE CHOICE PRETEST

Solve each equation.

1) $\log_3 (x+6) + \log_3 x = 3$

A) $\{-9, -19\}$ B) $\{3\}$
C) $\{3, -9\}$ D) $\{1\}$

2) $\log 3x^2 + \log 3 = \log 36$

A) $\{7\}$ B) $\{2, -2\}$
C) $\{4, -4\}$ D) No solution.

Condense this expression to a single logarithm.

3) $3\log_4 w + \dfrac{\log_4 u}{2} + \dfrac{\log_4 v}{2}$

A) $\log_4 \dfrac{u^2}{w^2 v^6}$

B) $\log_4 \dfrac{wu^3}{v^2}$

C) $\log_4 \dfrac{u^3}{wv^2}$

D) $\log_4 \left(w^3\sqrt{vu}\right)$

Expand this logarithm.

4) $\log_2 \left(bc^2\sqrt[3]{a}\right)$

A) $6\log_2 a + 6\log_2 c - 12\log_2 b$

B) $\log_2 b + 2\log_2 c + \dfrac{\log_2 a}{3}$

C) $\dfrac{\log_2 a}{3} + \dfrac{\log_2 b}{3} + \dfrac{\log_2 c}{3} + \dfrac{\log_2 d}{3}$

D) $\log_2 c + 2\log_2 a + 6\log_2 b$

Use the properties of logarithms and the logarithms provided to rewrite each logarithm in terms of the variables given.

5) $\log_3 4 = R$
$\log_3 10 = S$
$\log_3 7 = T$
Find $\log_3 147$

A) $\dfrac{TS}{R}$ B) $3T^2$

C) $\dfrac{9}{S}$ D) $2T + 1$

6) $\log_9 4 = A$
$\log_9 6 = B$
$\log_9 7 = C$
Find $\log_9 \dfrac{9}{16}$

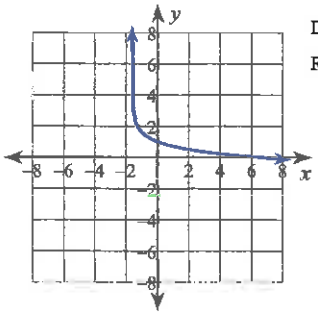
A) $C + 2A$ B) $\dfrac{9}{B^2}$

C) $1 - 2A$ D) $\dfrac{9}{A^2}$

Identify the domain and range of each. Then sketch the graph.

7) $y = \log_{\frac{1}{5}}(3x - 9)$

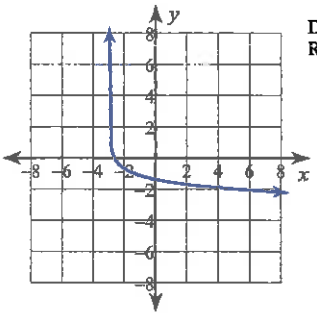
A)



Domain: $x > -\frac{5}{3}$

Range: All reals

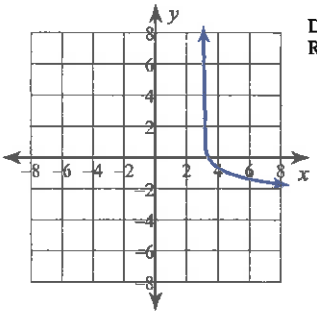
B)



Domain: $x > -3$

Range: All reals

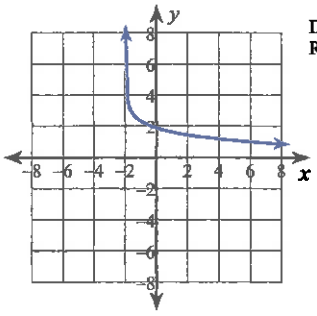
C)



Domain: $x > 3$

Range: All reals

D)

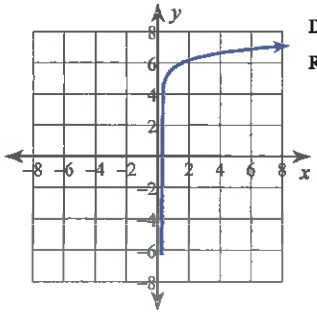


Domain: $x > -2$

Range: All reals

8) $y = \log_5(4x - 1) + 5$

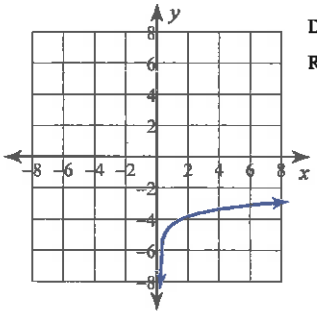
A)



Domain: $x > \frac{1}{4}$

Range: All reals

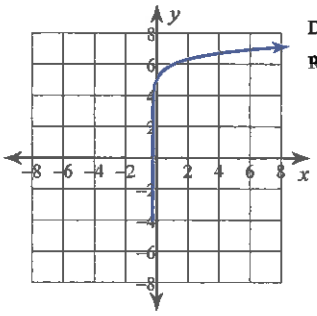
B)



Domain: $x > \frac{1}{4}$

Range: All reals

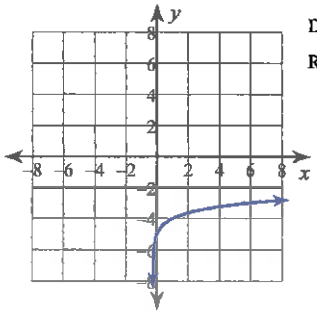
C)



Domain: $x > -\frac{1}{4}$

Range: All reals

D)



Domain: $x > -\frac{1}{4}$

Range: All reals

Answers to LOGARITHMS MULTIPLE CHOICE PRETEST

1) B	2) B	3) D	4) B
5) D	6) C	7) C	8) A