A2.A.19: Properties of Logarithms 6: Apply the properties of logarithms to rewrite logarithmic expressions in equivalent forms

1 If $\log x = 2\log a + \log b$, then x equals

1) a^2b
2) $2ab$
3) $a^2 + b$
4) $2a + b$

2 If $\log k = c\log v + \log p$, k equals

1) $v^c p$
2) $(vp)^c$
3) $v^c + p$
4) $cv + p$

3 If $\log x = 3\log a - \log b$, then x is equal to

1) $\frac{3a}{b}$
2) $\frac{a^3}{b}$
3) $3a - b$
4) $a^3 - b$

4 If $\log x = \log a - 3\log b$, x is equal to

1) $a - 3b$
2) $a - b^3$
3) $\frac{a}{3b}$
4) $\frac{a}{b^3}$

5 If $\log_b x = 3\log_b p - \left(2\log_b t + \frac{1}{2}\log_b r\right)$, then the value of x is

1) $\frac{p^3}{\sqrt{t^2 r}}$
2) $p^3 t^2 r^{\frac{1}{2}}$
3) $\frac{p^3 t^2}{\sqrt{r}}$
4) $\frac{p^3}{t^2\sqrt{r}}$

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Answer Section

1 ANS: 1

$\log x = \log a^2 + \log b$

$\log x = \log a^2 b$

$x = a^2 b$

REF: 061517a2

2 ANS: 1 REF: 080212b

3 ANS: 2 REF: 011014b

4 ANS: 4 REF: 010333siii

5 ANS: 4 REF: 061207a2