**7-5 Skills Practice**

***Properties of Logarithms***

**Use** $log\_{2}$ **3 ≈ 1.5850 and** $log\_{2}$ **5 ≈ 2.3219 to approximate the value of each expression.**

 **1.** $log\_{2}$ 25 **2.** $log\_{2}$ 27

 **3.** $log\_{2}$ $\frac{3}{5}$ **4.** $log\_{2}$ $\frac{5}{3}$

 **5.** $log\_{2}$ 15 **6.** $log\_{2}$ 45

 **7.** $log\_{2}$ 75 **8.** $log\_{2}$ 0.6

 **9.** $log\_{2}$ $\frac{1}{3}$ **10.** $log\_{2}$ $\frac{9}{5}$

**Solve each equation. Check your solutions.**

**11.** $log\_{10}$ 27 = 3 $log\_{10}$ *x* **12.** 3 $log\_{7}$ 4 = 2 $log\_{7}$ *b*

**13.** $log\_{4}$ 5 + $log\_{4}$ *x* = $log\_{4}$ 60 **14.** $log\_{6}$ 2*c* + $log\_{6}$ 8 = $log\_{6}$ 80

**15.** $log\_{5}$ *y* – $log\_{5}$ 8 = $log\_{5}$ 1 **16.** $log\_{2}$ *q* – $log\_{2}$ 3 = $log\_{2}$ 7

**17.** $log\_{9}$ 4 + 2 $log\_{9}$ 5 = $log\_{9}$ *w* **18.** 3 $log\_{8}$ 2 – $log\_{8}$ 4 = $log\_{8}$ *b*

**19.** $log\_{10}$ *x* + $log\_{10}$ (3*x* – 5) = $log\_{10}$ 2 **20.** $log\_{4}$ *x* + $log\_{4}$ (2*x* – 3) = $log\_{4}$ 2

**21.** $log\_{3}$ *d* + $log\_{3}$ 3 = 3 **22.** $log\_{10}$ *y* – $log\_{10}$ (2 – *y*) = 0

**23.** $log\_{2}$ *r* + 2 $log\_{2}$ 5 = 0 **24.** $log\_{2}$ (*x* + 4) – $log\_{2}$ (*x* – 3) = 3

**25.** $log\_{4}$ (*n* + 1) – $log\_{4}$ (*n* – 2) = 1 **26.** $log\_{5}$ 10 + $log\_{5}$ 12 = 3 $log\_{5}$ 2 + $log\_{5}$ *a*