c) $2^{x+1} = 5^{3x-4}$

$\log 2^{x+1} = \log 5^{3x-4}$

$(x+1)\log 2 = (3x-4)\log 5$

$(x+1)\,0.3010 = (3x-4)\,0.6990$

$0.3010x + 0.3010 = 2.097x - 2.7960$

$0.3010x - 2.097x = -2.7960 - 0.3010$

$-1.796x = -3.097$

$x \approx 1.7$

<u>8.4 Practice</u>

1, 2, 3, 4, 5

BLM 8–5 Section 8.4 Extra Practice

1. **a)** no solution **b)** $\pm\sqrt{29}$ **c)** -3
2. **a)** 8 **b)** 2 **c)** -3
3. **a)** 1.79 **b)** 1.01 **c)** 13.6
4. **a)** -1.76 **b)** -1.81 **c)** -9.32

5. Example: If Nicole's work is preferred it is because it uses the definition of logarithm to convert 5 into $\log_2 32$. Once this is done, the logarithm can be dropped from both sides of the equation. If Joseph's work is preferred, it is because it converts the logarithmic equation into an exponential function.