The Theory of Computation
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Solution Manual
Chapter 2, Additional Problem 2.1

1. True. We know that $\log n$ grows more slowly than $\sqrt{n}$; hence $n/\log n$ grows faster than $n/\sqrt{n} = \sqrt{n}$.
2. False. $3^{2\log_2 n} = 9^{\log_2 n} = 9^{\log_2 9 \log_9 n} = n^{\log_2 9}$ $\log_2 9$ is larger than 3, since we have $2^3 = 8 < 9$; hence $n^{\log_2 9}$ grows faster than n^3.
3. False. $3^{2n} = 9^n$, which grows faster than 6^n.