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1. Theta(n)

2.
```
def factorial(n):
    if n == 1:
        return 1
    return n * factorial(n-1)
```

3. Theta($n^2$)

4. $\begin{bmatrix} ae + bf \\ ce + df \end{bmatrix}$

5. a) $f^{I}(x) = 6x+5$
   b) $f^{I}(5) = 5$
   c) $f^{II}(x) = 6$
   d) $f^{II}(5) = 6$

6. P(A and B) = 0.18
   P(A or B) = 0.3 + 0.6 – 0.18 = 0.72
   P(not A) = 1 – P(A) = 0.7
   P(A | B) = 0.3

7. a) P(price < $75) = 0.6375
   b) P(price < $75 | color = green) = 0.6842
   c) P(price < $75, color = green) = 0.1625

8. 2 hens lay 2 eggs in 2 days
   2 hens lay 10 eggs in 10 days
   10 hens lay 50 eggs in 10 days

   50 eggs.