

1)  $\Theta(n)$

3)  $\Theta(n^2)$

4)  $[[a * e + b * f],$   
 $[c * e + d * f]]$

5) a)  $f'(x) = 6x + 5$

b)  $f'(5) = 35$

c)  $f''(x) = 6$

d)  $f''(5) = 6$

6)

a)  $P(A \text{ and } B) = P(A) * P(B) = 0.18$

b)  $P(A \text{ or } B) = P(A) + P(B) = 0.9$

c)  $P(\text{not}(A)) = 0.7$

d)  $P(A | B)$  (i.e., the conditional probability of A given B)  $= P(A) = 0.3$