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CSE 4309 – Assignment 1

Task – 1:

Answer:

The time complexity of this function is $\Theta(n)$.

Task – 2:

Answer:

```
def factorial(n):
    result = 1
    if n == 1 or n == 0:
        return result
    else:
        result = n * factorial(n-1)
        return result
```

Task – 3:

Answer:

The time complexity of this function is $\Theta(n^2)$.

Task – 4:

Answer:

A * B = $\begin{bmatrix} ae + bf \\ ce + df \end{bmatrix}$

Task – 5:

Answer:

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

$f'(5) = 35$

$f''(x) = 6$

$f''(x) = 6$

Task – 6:

Answer:

P (A and B) = 0.3 * 0.6 = 0.18

P (A or B) = 0.3 + 0.6 = 0.9

P (not (A)) = 1 – P(A) = 1 – 0.3 = 0.7

P (A|B) = P (A) = 0.3

Task – 7:

Answer:

P (price < \$75) = $\frac{40+70+15+50+60+20}{40+70+15+50+60+20+35+30+80} = \frac{51}{80}$ = 0.6375

P (price < \$75 | color = green) = $\frac{15+50}{15+50+30} = \frac{65}{95}$ = 0.6842

P (price < \$75, color = green) = P (price < \$75 | color = green) * P (color = green)

= 0.6842 * $\frac{15+50+30}{40+70+15+50+60+20+35+30+80}$

= 0.6842 * 0.2375

= 0.1625

Task – 8:

Answer:

Ten hens lay **50** eggs in ten days.