99. Assembly line scheduling
PROGRAM:

```
def assembly_line_scheduling(a, t, e, x, n):
    f = [[0 for _ in range(n)] for _ in range(2)]
    l = [[0 for _ in range(n)] for _ in range(2)]

    f[0][0] = e[0] + a[0][0]
    f[1][0] = e[1] + a[1][0]

    for j in range(1, n):
        f[0][j] = min(f[0][j - 1] + a[0][j], f[1][j - 1] + t[1][j - 1] + a[0][j])
        f[1][j] = min(f[1][j - 1] + a[1][j], f[0][j - 1] + t[0][j - 1] + a[1][j])

    l[0][n - 1] = 0
    l[1][n - 1] = 1 if f[0][n - 1] + x[0] <= f[1][n - 1] + x[1] else 0

    for j in range(n - 2, -1, -1):
        if f[0][j] + a[0][j + 1] <= f[1][j] + t[1][j] + a[0][j + 1]:
            l[0][j] = 0
        else:
            l[0][j] = 1

        if f[1][j] + a[1][j + 1] <= f[0][j] + t[0][j] + a[1][j + 1]:
            l[1][j] = 1
        else:
            l[1][j] = 0

    return min(f[0][n - 1] + x[0], f[1][n - 1] + x[1])

a = [[7, 9, 3, 4, 8], [8, 5, 6, 4, 5]]
t = [[2, 3, 1, 3], [2, 1, 2, 2]]
e = [2, 4]
x = [3, 2]
n = 5

print(assembly_line_scheduling(a, t, e, x, n))
```

OUTPUT:

```
32


=== Code Execution Successful ===
```

TIME COMPLEXITY:O(n)