

# WORKSHEET LITTLE'S LAW

## ACTIVITY



### Practice Questions:

Formula for Little's Law

$$L = \lambda \times W$$

Where:

L – Level of WIP (Min. Qty of items in the system at any moment in time)

$\lambda$  – Throughput Rate (Qty of items going through the system per time period) (assumes steady state)

W – Throughput Time (Average time an item spends inside the system)

**Q1.** John owns a **small coffee shop**. He wants to know the average number of customers queuing in his coffee shop, to decide whether he needs to add more space to accommodate more customers. Currently, his queuing area can accommodate **no more than eight people**.

John measured that, on average, **40 customers** are served at his coffee shop every hour. He also determined that, on average, a customer spends around **6 minutes queuing in his store (or 0.1 hours)**. Given these inputs, John can find the average number of customers queuing in his coffee shop by applying Little's Law will be?

- A. 5 customers      **B. 4 customers**      C. 8 customers      D. 2 customers

$$L = 40 \times 0.1 = 4 \text{ customers}$$

**Q2.**

In a shop, customers arrive at the rate of 10 per hour and stay an average of 0.5 hour.  
**Find the average number of customers in the store at any time.**

- A. **5 customers**      B. 4 customers      C. 8 customers      D. 2 customers

$$L = 10 \times 0.5 = 5 \text{ customers}$$



**Q3 .** A traffic enthusiast has been studying the passage of vehicles through a one-way tunnel.

- Her measurements show that, during the day, vehicles entered at the rate of 20/minute. The exactly 1km long tunnel has a fixed speed of 30km/h which everyone always drives at.

**How many vehicles are inside the tunnel on average at any moment in time?**

**Answer**

$L = \lambda \times W$ . We are looking for L

$\lambda = 20 / \text{minute}$

$W = \text{Time inside the system (the tunnel)} = 2 \text{ minutes (it takes 2mins to drive 1km at 30km/h)}$

$L = 20 \times 2 = 40 \text{ vehicles}$

**Q4.**

There are 2000 qualified accountants in Israel. (This is a constant figure that has remained the same for decades and is expected to remain the same in the future). The average career length of an accountant is 40 years.

**How many new accountants are required each year to maintain the status quo?**

Answer:

$L = \lambda \times W$ . We are looking for  $\lambda$

$\lambda = L / W$

$\lambda = 2000 / 40$

$\lambda = 50 \text{ new accountants / year}$

