

## STATISTICS 1: QUIZ SOLUTIONS

### Question 1

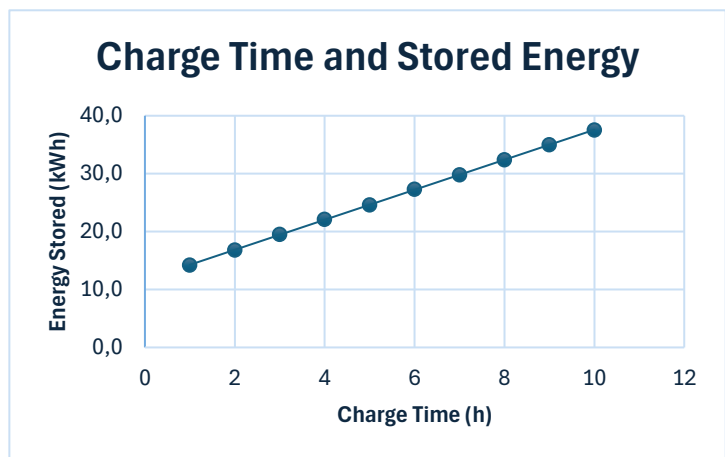
An engineer is testing a new fast-charging system for an electric vehicle. He records the time the car spends on the charger and the amount of energy stored in the battery.

| Charge Time (h) | Energy Stored (kWh) |
|-----------------|---------------------|
| 1               | 14,2                |
| 2               | 16,8                |
| 3               | 19,5                |
| 4               | 22,1                |
| 5               | 24,6                |
| 6               | 27,3                |
| 7               | 29,8                |
| 8               | 32,4                |
| 9               | 35,0                |
| 10              | 37,5                |

Use a scatter plot to decide which kind of function will best fit the data in the table.

- A. Linear      B. Quadratic      C. Exponential      D. No function

### Solution



So, the solution is A.

### Question 2

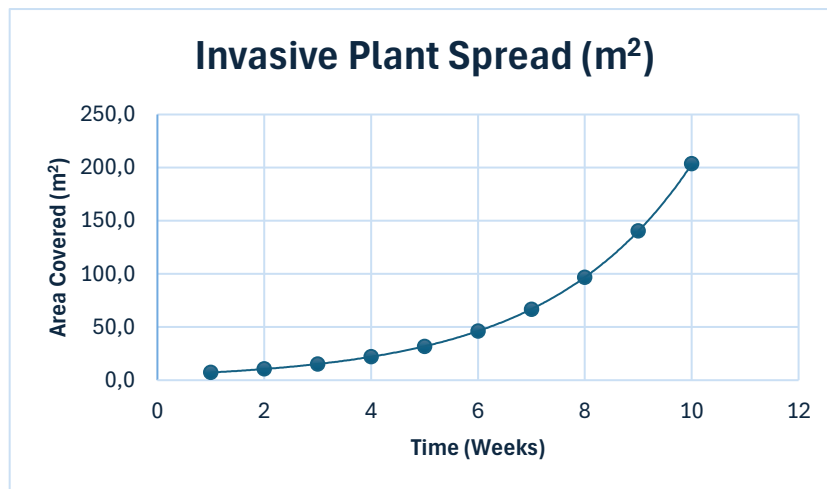
An environmental scientist is monitoring an invasive species of waterweed (like water hyacinth) growing on the surface of a local dam. She measures the surface area covered by the weed once a week.

| Time (Weeks) | Area Covered (m <sup>2</sup> ) |
|--------------|--------------------------------|
| 1            | 7,3                            |
| 2            | 10,5                           |
| 3            | 15,2                           |
| 4            | 22,0                           |
| 5            | 31,8                           |
| 6            | 46,1                           |
| 7            | 66,8                           |
| 8            | 96,9                           |
| 9            | 140,5                          |
| 10           | 203,7                          |

Use a scatter plot to decide which kind of function will best fit the data in the table.

- A. Linear      B. Quadratic      C. Exponential      D. No function

### Solution



So, the correct answer is C.

### Question 3

A student researcher is investigating a superstition that people born earlier in the year are naturally better at mathematics. He takes a random sample of 10 students, records their birth month (1=Jan, 10=Oct), and compares it to their final Grade 12 mathematics exam mark.

| Birth Month | Exam Mark (%) |
|-------------|---------------|
| 1           | 71            |
| 2           | 39            |
| 3           | 67            |
| 4           | 46            |
| 5           | 90            |
| 6           | 24            |
| 7           | 79            |
| 8           | 58            |
| 9           | 40            |
| 10          | 88            |

Use a scatter plot to decide which kind of function will best fit the data in the table.

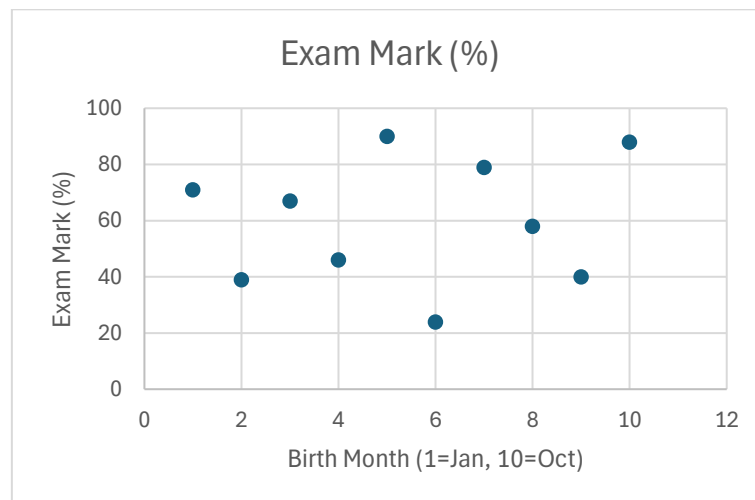
A. Linear

B. Quadratic

C. Exponential

D. No function

### Solution



So, the correct answer is D.

#### Question 4

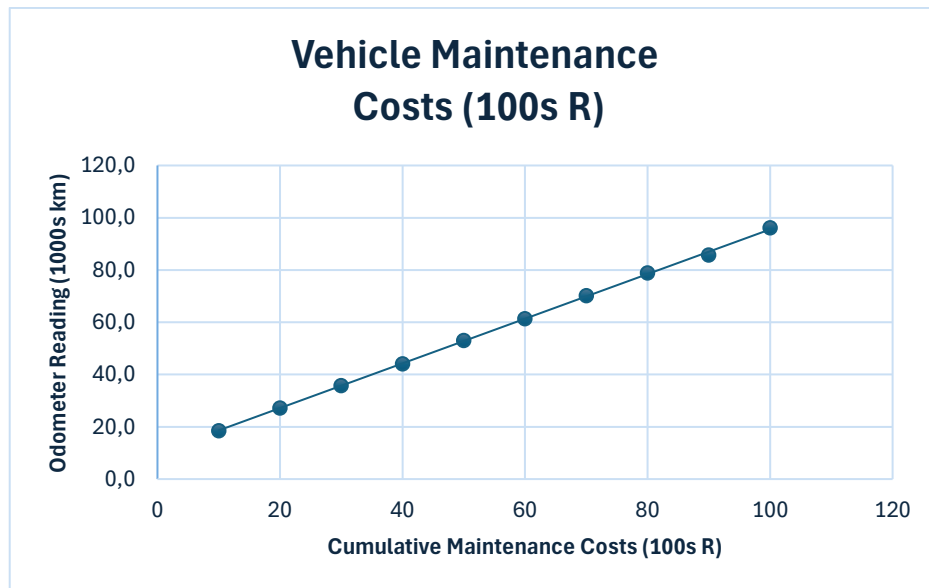
A transport company tracks the total distance driven by its delivery vehicles in 1 000s of km and the cumulative cost, in R100s, spent on routine maintenance, such as oil changes, tyre replacements and brake pads.

| Total Distance Driven<br>(1 000s km) | Cumulative Maintenance Cost (R100s) |
|--------------------------------------|-------------------------------------|
| 10                                   | 18,5                                |
| 20                                   | 27,2                                |
| 30                                   | 35,8                                |
| 40                                   | 44,1                                |
| 50                                   | 53,0                                |
| 60                                   | 61,4                                |
| 70                                   | 70,2                                |
| 80                                   | 78,9                                |
| 90                                   | 85,7                                |
| 100                                  | 96,1                                |

Use a scatter plot to decide which kind of function will best fit the data in the table.

- A. Linear      B. Quadratic      C. Exponential      D. No function

#### Solution



So, the correct answer is A.

### Question 5

The manager of a local coffee shop wants to optimise staff scheduling. For ten consecutive hours, starting at 09:00, which is one hour after opening, she records the total number of customers currently sitting inside the shop.

| Time After 08:00 (h) | Number of Customers |
|----------------------|---------------------|
| 1                    | 15                  |
| 2                    | 22                  |
| 3                    | 28                  |
| 4                    | 32                  |
| 5                    | 35                  |
| 6                    | 35                  |
| 7                    | 34                  |
| 8                    | 31                  |
| 9                    | 26                  |
| 10                   | 19                  |

Use a scatter plot to decide which kind of function will best fit the data in the table.

- A. Linear      B. Quadratic      C. Exponential      D. No function

### Solution



So, the correct answer is B.