

2.16 Do Now: Linear regression and correlation

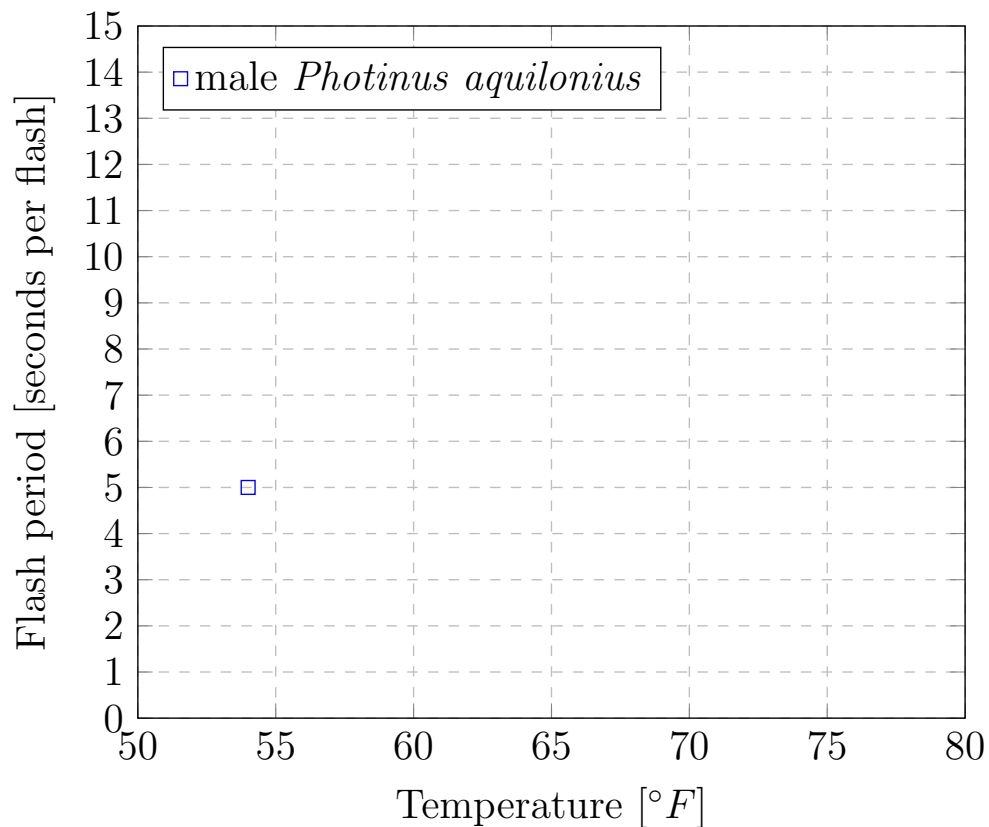
1. The flash rate of fireflies depends on various factors, including temperature. As the temperature drops, the flash rate slows down.

Firefly field data (simulated) where T is the temperature and $f(T)$ is the number of seconds between flashes.

| | | | | | |
|--------|----|----|----|----|----|
| T | 54 | 60 | 64 | 70 | 75 |
| $f(T)$ | 5 | 8 | 10 | 11 | 13 |

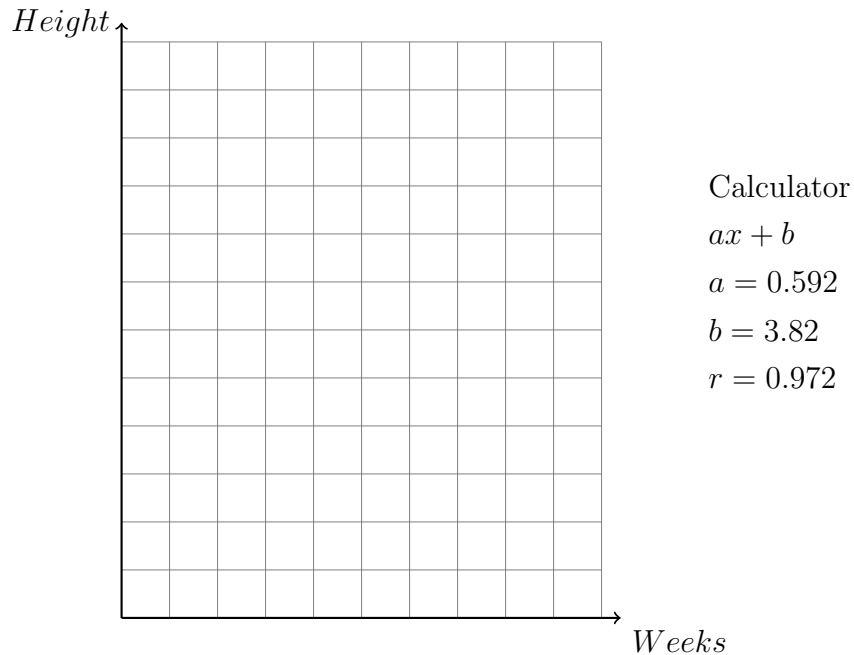
- (a) Plot the data in the table on the grid below
(one point is plotted for you)
- (b) Calculate \bar{x} and \bar{y}
- (c) Enter the data in your calculator

Temperature dependence of male *Photinus aquilonius* fireflies



2. Dr. Huson buys a new plant and measures how tall it is after a number of weeks. Some of his measurements are shown below. Plot the points in the grid below.

| | | | | |
|-------------|---|---|---|----|
| Weeks | 2 | 5 | 7 | 10 |
| Height (cm) | 5 | 6 | 8 | 9 |



State, to the *nearest tenth*, the linear regression equation that approximates the height, y , of the plants after x weeks.

Explain what the y -intercept means in the context of the problem.

Explain what the slope means in the context of the problem.