LINEAR FUNCTIONS

A DEFINITION

Definition Linear Function

A linear function is defined by:

$$f(x) = ax + b$$

where a is the slope, and b is the y-intercept.

Ex: Access to a swimming pool costs a fixed entrance fee of \$12, plus \$5 for each hour you stay. Let P(x) be the total price for x hours at the pool. Find a formula for P(x).

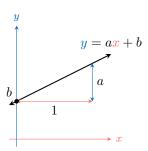
Answer: The total cost is \$12 for entry plus \$5 for each of x hours:

- For x = 1, $P(1) = 12 + 5 \times 1$
- For x = 2, $P(2) = 12 + 5 \times 2$
- :
- For x, $P(x) = 12 + 5 \times x$

B GRAPH

Proposition Graph

The graph of a linear function f(x) = ax + b is a straight line of equation y = ax + b, where a is the slope and b is the y-intercept.



Ex: For the function f(x) = 0.5x + 1, draw its graph.

Answer:

