

## Exercise 24

For the following exercises, consider this scenario: The weight of a newborn is 7.5 pounds. The baby gained one-half pound a month for its first year.

What is the output when the input is 6.2? Interpret your answer.

---

### Solution

Because the baby's weight increases at a constant rate, a linear function can be used to model it. The slope is 0.5, the rate that the baby's weight increases (in pounds per month), and the initial weight is 7.5 (in pounds).

$$W(t) = 0.5t + 7.5$$

When the input is 6.2, the output is

$$W(6.2) = 0.5(6.2) + 7.5 = 10.6.$$

This means that at 6.2 months after being born, the baby weighs 10.6 pounds.