

## Task

In order to gain popularity among students, a new pizza place near school plans to offer a special promotion. The cost of a large pizza (in dollars) at the pizza place as a function of time (measured in days since February 10th) may be described as

$$C(t) = \begin{cases} 9, & 0 \leq t \leq 3 \\ 9 + t, & 3 < t \leq 8 \\ 20, & 8 < t < 28 \end{cases}$$

(Assume  $t$  only takes whole number values.)

- If you want to give their pizza a try, on what date(s) should you buy a large pizza in order to get the best price?
- How much will a large pizza cost on Feb. 18th?
- On what date, if any, will a large pizza cost 13 dollars?
- Write an expression that describes the sentence "The cost of a large pizza is at least  $A$  dollars  $B$  days into the promotion," using function notation and mathematical symbols only.
- Calculate  $C(9) - C(8)$  and interpret its meaning in the context of the problem.
- On average, the cost of a large pizza goes up about 85 cents per day during the first two weeks of the promotion period. Which of the following equations best describes this statement?
  - $\frac{C(13)+C(0)}{2} = 0.85$
  - $\frac{C(13)-C(0)}{13} = 0.85$
  - $\frac{C(13)}{13} = 0.85$
  - $\frac{C(\text{Feb.23})-C(\text{Feb.10})}{13} = 0.85$