

Math 4SN

Word Problems on Linear Equations

Name: Answers

(keywords: each or per)

- Define variables x and y .
- Determine the initial value and rate of change.
- Write an equation in the form $y = ax + b$ for each situation.

a) Shannon has already taken 2 pictures at home, and she expects to take 2 pictures during every day of vacation.

Let $x =$ # of days of vacation
 $y =$ Total number of pictures

Initial value (b): 2
Rate of Change (a): 2

Equation: $y = 2x + 2$

b) Keenan's birthday party costs \$4, plus an additional \$1 for each guest he invites.

Let $x =$ Number of guests
 $y =$ Cost

Initial value (b): 4
Rate of Change (a): 1

Equation: $y = x + 4$

c) Before beginning voice lessons, Leslie already knew how to sing 1 piece, and she expects to learn 2 new pieces during each week of lessons.

Let $x =$ Number of weeks
 $y =$ Number of songs learned

Initial value (b): 1
Rate of Change (a): 2

Equation: $y = 2x + 1$

d) During each week of piano lessons, Pancho learns to play 2 new pieces.

Let $x =$ Number of weeks Initial value (b): 0
 $y =$ Number of songs learned Rate of Change (a): 2

Equation: $y = 2x$

e) A 50 000 gallon swimming pool is emptied at a rate of 220 gallons per hour.

Let $x =$ Number of hours Initial value (b): 50 000
 $y =$ Gallons of water left in the pool Rate of Change (a): -220

Equation: $y = -220x + 50\,000$

f) The cost for an amusement park is \$50 for entry. This includes an unlimited number of rides.

Let $x =$ Number of Rides Initial value (b): 50
 $y =$ Total Cost (\$) Rate of Change (a): 0

Equation: $y = 50$