

1.1 - Using Variables

Vocabulary:

- Variable
- Algebraic Expression
- Equation
- Open Sentence

Variable	
a letter used to represent an unknown	X

algebraic expression	<u>example</u> $X + 5$
• does <u>not</u> have an = sign	<u>non example</u> $X + 7 = 10$

equation	<u>example</u> $X + 7 = 10$
• contains an = sign	<u>non example</u> $X + 5$

open sentence	
an equation w/ 1 or more variables	<u>example</u> $20g = m$

1 EXAMPLE Write an algebraic expression for each phrase.

⁺
a. the sum of n and 8

$$n + 8$$

b. six less than b

~~$b - 6$~~

$$b - 6$$

Pg. 6

#5. Write an algebraic expression for the phrase:
the quotient of n and 8.

$$\frac{n}{8} \text{ or } n \div 8$$

#7. Write an algebraic expression for the phrase:
23 less than x .

$$x - 23$$

2 EXAMPLE

Define a variable and write an algebraic expression for each

phrase.

- a. "ten more than twice a number."
 let $n =$ a number

$$10 + 2n$$

- b. "three times a number minus six."

let $n =$ a number

$$3n - 6$$

$$3(n - 6)$$

3 times the quantity a number
 minus 6

~~$$n^2 = n \cdot n$$~~

pg. 6

#9. Write an expression for each phrase:
2 more than twice a number.

$$2 + 2n$$

#15. Write an expression for each phrase.
the quotient of a number and 6.

$$\frac{n}{6} \text{ or } n \div 6$$

3 EXAMPLE Write an equation to show the total income from selling tickets to a school play for \$5 each.

income = i
tickets = t

$$5t = i$$

pg. 6

#20. Define variables and write an equation to model each situation.
What is the number of slices of pizza left from an 8-slice pizza after you have eaten some slices?

S = slices eaten

r = remaining slices

$$8 - S = r$$

4 EXAMPLE

Write an equation for the data in the table.

Gallons	4 ^{•20}	6 ^{•20}	8 ^{•20}	10 ^{•20}
Miles	80	120	160	200

$g = \text{gallons}$
 $m = \text{miles}$

$$20g = m$$

pg. 7

#21. Define variables and write an equation to model the relationship in each table.

 $w = \text{workers}$ $r = \text{radios}$

Number of workers	Number of Radios Built
1 • 13	13
2 • 13	26
3 • 13	39
4 • 13	52

$$13w = r$$

Homework Problems:

pg. 7 #25, 36, 39, 43, 55