3.2 WRITING EXPRESSIONS

ESSENTIAL QUESTION: How can you write an expression that represents an unknown quantity

***See the notes from 1.1 Whole Number Operations for other words that are used for the four main operations in math-> ADDITION, SUBTRACTION, MULTIPLICATION, DIVISION.

EXAMPLE 1

Write the phrase as an expression.

1) 8 fewer than 21

$21 - 8$

2) the product of 30 and 9

30×9 or $(30)9$

3) 14 more than a number x

$x + 14$

4) a number y minus 75

$y - 75$

5) the quotient of 3 and a number z

$3 \div z$ or $\frac{3}{z}$

6) the sum of 18 and 35

$18 + 35$

7) 6 times 50

$6(50)$ or $6 \cdot 50$

8) 25 less than a number b

$b - 25$

9) a number x divided by 4

$x \div 4$ $\quad \frac{x}{4}$

10) the total of a number t and 11

$t + 11$

11) 100 decreased by a number k

$100 - k$

EXAMPLE 2

The length of Interstate 90 from the West Coast to the East Coast is 153.5 miles more than 2 times the length of Interstate 15 from southern California to northern Montana. Let *m* be the length of Interstate 15. Which expression can you use to represent the length of Interstate 90?

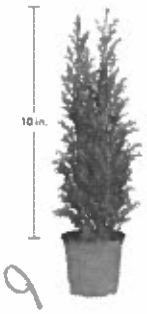
a) 2m + 153.5 b) 2m – 153.5 c) 153.5 – 2m d) 153.5 + 2

You plant a cypress tree that is 10 inches tall. Each year, its height increases by 15 inches.

a) Make a table that shows the height of the tree for 4 years.
Then write an expression for the height after *t* years.

$10 + 15(t)$

b) What is the height after 9 years?



Year (t)	Height (inches)
0	10
1	$10 + 15(1) = 25$
2	$10 + 15(2) = 40$
3	$10 + 15(3) = 55$
4	$10 + 15(4) = 70$

Evaluate
$10 + 15t$ when $t = 9$

$10 + 15(9)$

$10 + 135$

145

After 9 years the height will be 145 inches