Warm Up

Oct 28

Review of divisibility rules

Which of these numbers is 37 548 divisible by? How do you know?

a) 2 b) 3 c) 4 d) 5 e) 6 f) 8 g) 9 h) 10

yes b/c even | yes | yes | NO no 0 or 5 | yes | NO | yes | NO

Mental Math

What is $47 + 58$? =105

Subtract 137 from 200. 200-137=63

Multiply 23×4. 92

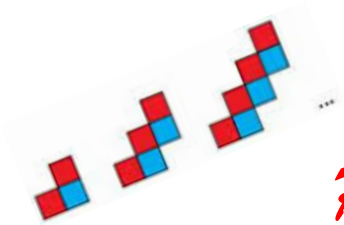
Divide 144 by 12. 12

Add 356 and 289. 645

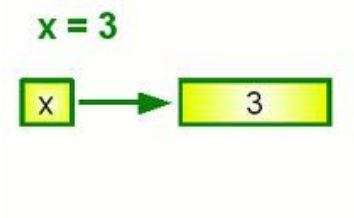
Subtract 238 from 400. 162

Multiply 15×14. 120

Divide 125 by 5. 25



Patterns & Relations



Unit 1(Part 2) Patterns & Relations

Variables, Constants & Coefficients

☆ **A constant is value that never changes. (A Number)**
Ex) There will always be 7 days in a week,

A variable is a letter that represent the unknown value
☆ **Ex 1) The number of students present in grade 7 class can change from day to day, or**

Ex 1) Let p represents the number of students absent from school today.

$p = 4$

☆ **A coefficient is a number in front of the variable**

represents repeated addition

Repeated Addition is when you write the variable being added to itself.
Example) 3c = c + c + c

Often we translate phrases into expressions in math.

Algebraic expression contains a variable and an operation.

There are certain words that we associate with the different operations:

Addition	Subtraction	Multiplication	Division
sum	difference	product	quotient
plus	minus	times	divided by
increased by	decreased by	double, twice	
	reduced by	of	
		triple	

Write this down and fill in the blanks :)

Ex) **In the expression 8m + 3,**
- **8 is the coefficient of the variable**
- **3 is the constant term**
- **m is the variable**

* Letter is ALWAYS the variable

Ex1) $3x+2$

Coefficient: 3

Variable: x

Constant: 2

Ex 2)

$v - 7$

Coefficient: 1

Variable: v

Constant: -7

*When there is no number infront of the letter, the coefficient is 1

(a) $4x + 1$ coef. = 4, variable = x, constant = 1

(b) $7c + 7$ coeff = 7, variable = c, constant = 7

(c) $a - 2$ coeff = 1, variable = a, constant = 2

(d) $6b + 16$ Coeff = 6, variable = b, constant = 16

You try

Always state what your variable represents

1. Translate the following into expressions:

(a) a number increased by 8 $a + 8$

(b) a number reduced by 21 $b - 21$

(c) the product of a number and 9 $9x$

(d) twice a number increased by 3 $2c + 3$

2. Write the following algebraic expressions as words:

(a) 3 + v 3 increased by a number

(b) 8r

(c) t - 9

(d) y / 8

Solutions

1. Translate the following into expressions:
(a) a number increased by 8
(b) a number reduced by 21
(c) the product of a number and 9
(d) twice a number increased by 3

2. Write the following algebraic expressions as words:
(a) 3 + v
(b) 8r
(c) t - 9
(d) y / 8

Class/Homework

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Identify the numerical coefficient, the variable, and the constant term in each algebraic expression.

a) $3x + 2$ **b)** $5n$ **c)** $w + 3$ **d)** $2p + 4$

Write an algebraic expression for each phrase.

a) six more than a number
b) a number multiplied by eight
c) a number decreased by six
d) a number divided by four

Write an algebraic expression for each sentence.

a) Double a number and add three.
b) Subtract five from a number, then multiply by two.
c) Divide a number by seven, then add six.
d) A number is subtracted from twenty-eight.
e) Twenty-eight is subtracted from a number.

a) Write an algebraic expression for each phrase.
  i) four more than a number
  ii) a number added to four
  iii) four less than a number
  iv) a number subtracted from four
b) How are the expressions in part a alike?
  How are they different?