

Warm Up Grade 7
Oct. 19

- 1) In the expression 5 + 3v,
 - constant ______5
 - Coefficient 3
 - variable _____
 - -Operation(s) multiply

Write the above algebraic

expressions in words.

5 more than 3 times a number

2) If r = 2 then what does 6 + 7r equal?

- 3) Combine like terms, then evaluate for h = 4 and p = 2
- a) 8 + 9h + 7 2h 1h + 6 9h 2h 1h + 8 + 7 6 6h + 9 6(4) + 9 24 + 9 33

b)
$$4h+9p-2p-5p+10$$

$$= 4h-2h+9p-5p+10$$

$$= 2h + 4p + 10$$

$$= 2(4) + 4(2) + 10$$

$$= 4h-2h+9p-5p+10$$

$$= 2h + 4p + 10$$

$$= 2h + 4p + 10$$

P -4

In the expression 9

- Coefficient_

-Operation(s)

Write the above algebraic

expressions in words.

A number divide

- variable _

constant

Combining Like terms

1. Simplify the following:

(a)
$$4\mathbf{v} + 7\mathbf{v} = \mathbf{I} \mathbf{V}$$

(b)
$$5n + 8n - 4n$$
 (c) $9g - 4g = 5$

(c)
$$9g - 4g = 5$$

$$(d) 3a + 5 + 8 + 6a - 9 + 13$$

(d)
$$3a + 5 + 8 + 6a = 9 + 13$$
 (e) $7 + 4b + 6 + 3b = 76 + 13$

(f)
$$10f + 8 - 7f + 9 = 3 + 17$$

$$(g) 3d + 9c - 2d + 2c + 6d = 7d + 1e$$

(i)
$$4r + 7w + 8r + w + r = 13r + 8w$$

(j)
$$16 + h + 4h - 7 - 2h + h$$

$$(k) m + m + m + m = 4m$$

(l) 4 + y + 2 + 2y + y + 1

(m)
$$20u + 7 + 8 - 3u + 7v$$

 $17u + 7v + 15$

(n) b + f + 2f + 3b + f + 4b

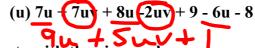
(o)
$$3e + 7t + 5 + 4t + 8$$

(p)
$$3x + 6y + 3x - 4y - 9$$

$$(r) 3x + 7y + 2xy + 4xy + 5x$$

$$(s) 6h + 9b - 5h + 4b + 2h$$
 $3h + 13b$

(t) 9a + 6b + 3ab + 4b + 2ab + a



2. Simplify the following, then evaluate with the given values.

(a)
$$4a + 8 - a + 6$$
, $a = 5$

(b)
$$3g - 2g + h + g - 7$$
, $g = 10$, $h = 3$

(c) 5s + 2t + s + t - 7, s = 2, t = 9

(d)
$$x + y + 3 + 2x + 5y + 6x$$
, $x = -1$, $y = 4$

$$65+3t-7$$
 $6\times2+3\times9$
 $12+27-7=32$

$$9x+6y+3$$

 $9x-1+6x4+3$
 $-9+24+3=18$

(e) 2a + 6ab - a + b + 3ab, a = 6, b = 10

(f)
$$7k + 8 - 4 - 3k + 6 + k$$
, $k = 8$

a +9ab +6 6+9x6x10+10 6+540+10 546

2. Simplify the following, then evaluate with the given values.

(a)
$$4a + 8 - a + 6$$
, $a = 5$

$$3 - a + 6$$
, $a = 5$ (b) $3g - 2g + h + g - 7$, $g = 10$, $h = 3$

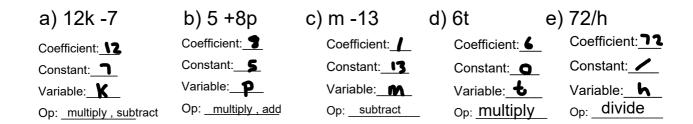
(c)
$$5s + 2t + s + t - 7$$
, $s = 2$, $t = 9$

(d)
$$x + y + 3 + 2x + 5y + 6x$$
, $x = -1$, $y = 4$

(e)
$$2a + 6ab - a + b + 3ab$$
, $a = 6$, $b = 10$

(f)
$$7k + 8 - 4 - 3k + 6 + k$$
, $k = 8$

6) In each of the following state the coefficient, constant, variable and what operations are in the expression.



- 7) Write the above expressions into a phrase.
 - a) The product of 12 and a number decreased by 7
 - b) 5 more than 8 times a number
 - c) a number reduced by 13
 - d) the product of 6 and a number
 - e) 72 divided by a number

Review

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 value that changes. (Letter)

Ex 1) The number of students present in grade 7 class can change from day to day, or

Ex 2) the number of days it rains in one week changes.

- a letter that represent the unknown value

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

Ex 2) Let a represent the teacher's age.

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

$$5\mathbf{w} = \mathbf{w} + \mathbf{w} + \mathbf{w} + \mathbf{w} + \mathbf{w}$$

When using variables, you do not always have to include the times sign, it is assumed to be there.

Ex 1) 6n means 6 x n

Ex 2) 12t means 12 x t.

Review

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 plus	difference minus	product times	quotient divided by
increased by more	decreased by reduced by	double, twice (x2) of	Share
gain	less	triple (x3)	grouped
deposit	lost	per	
	debut	for each	
	withdraw	for every	

Name:	Worksheet	Always state what your variable represents
1. Translate the	following it to an algebraic express	•
(a) a number red	uced by 50	
(b) 6 more than a	double a number	
(c) the product of	f 7 and a number reduced by 5	
(d) The sum of a	number and 6	
(e) a number divi	ide by 7 then increased by 11	
(f) A number is s	ubtracted from 9	
2. Write the fol (a) 6x - 8	llowing algebraic expressions as v	words:
(b) $m + 14$		
(c) 3x		
(d) 15 - k		

Name:_____

Combining Like terms

3. Simplify the following:

(a)
$$4 \text{ m} + 6 \text{y} - 2 \text{y} + 6 \text{m}$$

(b)
$$6b + 7f + 2b + 10$$

(d)
$$8a + 6 + 8 - 5a$$

(e)
$$10 + 16b + 6 + 3b$$

(f)
$$18f + 11 - 7f + 9$$

(g)
$$14r + 12c - 3r - 7c + 6d$$

(h)
$$9s + 12 - 10 + 2s + 7 - 4s$$

(i)
$$16r + 4w + 11r + w - 5r$$

(j)
$$16 + h + 4h - 7 - 2h + h$$

(k)
$$6h + 9b - 5h + 4b + 2h$$

(1)
$$3x + 6y + 3x - 4y - 9$$

(m)
$$22u + 14 - 3 - 2u + 7v$$

(n)
$$b + f + 2f + 3b + f + 4b$$

(o)
$$3e + 7t + 5 + 4t + 8$$

4. Simplify the following, then evaluate with the given values.

(a)
$$10a + 6 - 5 - 2a$$
, $a = 5$

(b)
$$9g + 8 + g - 4g + 7h + 4$$
, $g = 10$, $h = 3$

(c)
$$7s + 6s - s + 8t - 2t$$
, $s = 2$, $t = 9$

(d)
$$2y + 3x + 5x + 7y + 15$$
, $x = 1, y = 4$

5) In	each	of the	following	state	the	coefficier	nt, c	onstant,	variab	le
and v	what d	pperati	ons are ir	n the e	expr	ession.				

a) 6+ 2n	b) 8p-6	c) y - 14	d) 2g	e) f / 4
Coefficient:	Coefficient:	Coefficient:	Coefficient:	Coefficient:
Constant:	Constant:	Constant:	Constant:	Constant:
Variable:	Variable:	Variable:	Variable:	Variable:
Op:	Op:	Op:	Ор:	Op:

6) Write the above expressions into a phrase.

a)		

b)	

c)

1\			
a)			

gr 7 u1 pat day 4.5 REVIEW algebraic expressions, combine (Notes).notebo@ktober 19, 2022