

# Writing Expressions

## agenda

Warm-Up (see right)

Notes (p. 7&8)

HW: Practice #1-7

## reminders

Mathbook info &  
Calculator form  
due FRIDAY

## Essential

### Question

How do I translate  
verbal sentences  
into expressions  
and equations?

## Warm-up




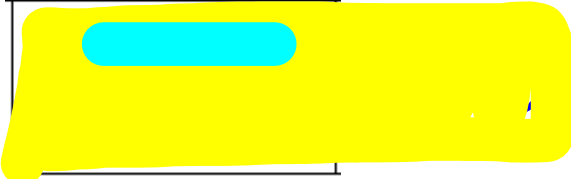


Pick up all the papers at the front and grab  
your teams' supply bin!!

Turn in any signed forms to the correct  
tray.

Using the matching cards at your table,  
match the verbal expression with the  
correct algebraic expression. (HINT: Look  
at the numbers!!)

# Writing Expressions

The  of 8 and a number	$8 \times$	Twice the quantity $x$ minus 9 plus 1	$2(x-9)+1$	The difference of a number and 4	$x-4$
A number  12	$x \times 12$	The sum of $x$ and 10 divided by 2	$\frac{(x+10)}{2}$	A number decreased by 10	$x-10$
5  a number	$x \times 5$	20 less than a number is 2.	$x-20=2$	7 subtracted from a number	$x-7$
The quotient of $x$ and 2	$\frac{x}{2}$	The product of 17 and a number	$17x$	A number to the power of 4	$x^4$
16 divided by a number	$\frac{16}{x}$	One-fourth of a number	$\frac{1}{4}x$	A number squared plus 6	$x^2+6$
	$16 \div x$				

# Writing Expressions

Glue the yellow sheet onto page 7! Write the words we highlighted into the appropriate operation symbol.

Algebra I - Unit 1: Topic 1 - Writing Expressions

Page 7



## Math Talk! Translating words into math.

Addition

sum  
plus  
more than  
increased  
together  
and

Multiplication

twice triple  
OF  
product times

Subtraction

minus  
decreased by  
less than  
take away  
different

Division

quotient  
half  
divided

Exponents

squared  
to the power of...

Parenthesis

Quantity

EQUALS

IS

"Turn Around Words"

LESS  
THAN

$3x-3$

# Writing Expressions

Glue the white page onto Page 8!

## Essential Question:

How do I translate verbal sentences into expressions and equations?

## Vocabulary:

Expression:

$$3 + x$$

A mathematical phrase that contains operations, numbers, and/or variables

Equation:

$$3 + x = 5$$

A mathematical sentence that two expressions are equal.


Variable:

A unknown value that changes; represented by



$x$

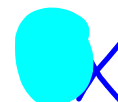
Constant:

A value that does not change; 

4

Coefficient

The number multiplied by a variable

  $x$

# Writing Expressions

Essential Question:

**Page 8!**

How do I translate verbal sentences into expressions and equations?

**Write a verbal description for each algebraic expression or equation given below:**

1.  $\frac{x^3}{5}$

2.  $\frac{1}{2}n + 4$  10

3.  $4m - 5n = -6$

4.  $3x^2 + 5y$

The quotient  
of a number  
cubed and 5.



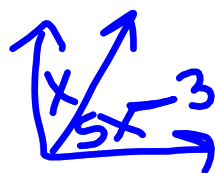
# Writing Expressions

Essential Question:

**Page 8!**

How do I translate verbal sentences into expressions and equations?

5. Two angles are <sup>90</sup>complementary. One angle is three <sup>-</sup>less than five times the other. Write an equation to find the measure of each angle.



$$\underline{x} + \underline{5x-3} = \overset{9}{90}$$

**Remember!**  
**Complementary Angles-**

Add to  $90^\circ$

**Supplementary Angles-**

Add to  $180^\circ$

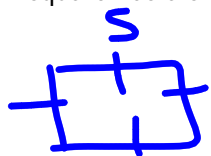
# Writing Expressions

## Essential Question:

Page 8!

How do I translate verbal sentences into expressions and equations?

6. A square has a side length of  $s$ . What is its perimeter?



$$s + s + s + s = 4s$$

7. Write an algebraic expression for the verbal expression. Three plus the quotient of 7 and a number subtracted from two times the same number.

$$2x - \left( 3 + \frac{7}{x} \right)$$

8. Lara wants to buy a Rock Band game that is on sale for 35% off the regular price. The regular price of the game is  $p$  dollars. Which expression represents the sale price of the game?

A.  $p - 0.35p$

C.  $p - 35p$

~~B.  $p + 0.35p$~~

~~D.  $0.35p$~~

per cent  $\rightarrow$  move  
decimal TWICE

Check your answers at @MskMath  
twitter

HW will be checked tomorrow at the BEGINNING of class!

**Algebra I - Unit 1: Topic 1 – Writing Expressions and Equations**  
**Practice – Writing Expressions and Equations**

Name \_\_\_\_\_ Date \_\_\_\_\_ Pd. \_\_\_\_\_

- Raquel earns \$150 per week at Forever 21 plus 15% commission on her total sales.
  - Write an expression to represent Raquel's commission on  $x$  total sales.
  - Write an equation to find her total sales if her total earnings for the last two weeks were \$500.
- Angelina rents a bounce house for a birthday party for a delivery fee of \$100 plus a rental fee of \$20 per hour.
  - Write an expression for the cost of renting the bounce house for  $x$ , the number of hours.
  - Write an equation if the total charge was \$220.
- Nate has written 4 paragraphs of an essay for his English class so far. He can write a paragraph every  $\frac{2}{3}$  of an hour. Write an expression for the number of paragraphs in Nate's essay after  $h$ , hours.
- Two angles are complementary. The larger angle is 6 more than twice the smaller angle. Write an equation to find the measure of each angle. (Hint: Draw a picture)
- Brock is six feet tall. He climbs a ladder to paint some trim on his house. For each rung that he climbs, Brock is 1.2 feet higher above the ground. Which expression could you use to calculate the distance from the top of Brock's head to the ground if  $r$  represents the number of ladder rungs he has climbed?
 

A  $1.2r + 6$       B  $1.2r$       C  $r + 6$       D  $6r + 1.2$
- An object's weight on Mars is 38% of its weight on Earth. If an object weighs  $p$ , pounds on Earth, write an expression for its weight on Mars.
- Which situation is best represented by the algebraic expression  $200 - \frac{x}{4}$ ?
  - Renee earned \$200 creating a website and a 20% advance on the next website she creates for the same company.
  - Joe had \$200 and spent a fourth of it on a Hawaiian Falls season pass.
  - Skip is watching his calorie intake. He ate a 200 calorie breakfast bar and shared a pizza with 3 of his friends.
  - There is a \$200 set up fee for making T-shirts and a fourth of the cost is split between anyone ordering a shirt.



# Writing Expressions

Essential Question: How do I translate verbal sentences into expressions and equations?

Make sure you SHOWED YOUR WORK by highlighting/underlining your important words! NO WORK = NO CREDIT = NO KIDDING!

1. A.  $150 + 0.15x$     B.  $300 + 0.15x = 500$

2. A.  $100 + 20x$     B.  $100 + 20x = 220$

3.  $4 + (2/3)h$

4.  $x + 6 + 2x = 90$  BONUS: how could you simplify this equation?

5. A

6.  $0.38p$

7. C