March 9, 2021

6th Grade
March 9, 2021

Today we will:

-Review Friday's WS

-Take notes on properties and do a WS together as examples

-Begin HW if time

I am out of pencils. If you need one, it will cost ONE DEMERIT. Going to your locker to get one also costs ONE DEMERIT.

HOMEWORK:

Skills Practice WS

ALEKS assignment: 60 min and 5 topics due next Monday by 11:59pm

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Lesson 4 Skills Practice

Algebra: Write Expressions

Define a variable. Then write each phrase as an algebraic expression.

1. one more ball than is on the playground

$b + 1$ b=balls on playground

2. three more cookies than are in the jar

$c + 3$ c=cookies

3. twelve fewer questions than were on the first test

$q - 12$ q→questions

4. eight dollars more than the shirt costs

$c + 8$ c→cost

5. three times as many drinks on the tray

$3d$ d→drinks

6. five dollars less than Yumi's pay

$y - 5$

7. The English class has half as many students as the math class.

$\frac{1}{2}s$ or $\frac{s}{2}$ $\frac{1}{2} \times s$ s=students in math

8. one third of Emily's age

$a \cdot \frac{1}{3}$ $\frac{1}{3}a$ or $\frac{a}{3}$ or $a \div 3$ a→Emily's age

9. ten times the minutes spent exercising

$10m$ m→minutes

10. MAIL Spencer bought 3 books of stamps and mailed a package. It cost $4.50 to mail the package. Define a variable and write an expression to represent the total amount he spent at the post office.

$3b + 4.50$ b→cost of book of stamps

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Lesson 4 Homework Practice

Algebra: Write Expressions

Define a variable. Then write each phrase as an algebraic expression.

1. nine less than a number

$n - 9$

2. five times the number of books in the library

$5b$ or $b \cdot 5$ or $b \times 5$

3. three more pancakes than his brother ate

$p + 3$

4. two more than seven times Lynn's age

$7L + 2$ or $2 + 7L$ $L \rightarrow$ Lynne's age

5. 9 minutes less than Frances' time

$t - 9$

6. **SPORTS** The distance around a basketball, or circumference, is about three times the circumference of a softball. Define a variable and write an expression to represent the circumference of a basketball.

$C \rightarrow$ circumference of softball $3c$

7. **PLUMBING** A plumber charges $50 to visit a house plus $40 for every hour of work. Define a variable and write an expression to represent the total cost of hiring a plumber.

$50 + 40h$ $h \rightarrow$ # hours worked

8. **CAMPING** A camp leader figures that she needs one tent for every three campers, plus a tent for herself. Define a variable and write an expression to represent the number of tents needed.

$c \rightarrow$ # campers

$\frac{c}{3} + 1$ or $c \div 3 + 1$

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Properties of Real Numbers

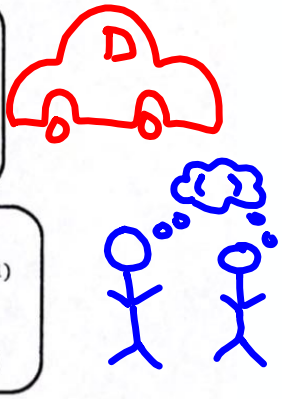
The properties of real numbers help us simplify math expressions and help us better understand the concepts of algebra.

Commutative Property of Addition

$a + b = b + a$ $\quad 3 + 7 = 7 + 3$

Commutative Property of Multiplication

$c \times d = d \times c$ $\quad 8 \times 5 = 5 \times 8$



Associative Property of Addition

$(e + f) + g = e + (f + g)$ $\quad (4 + 9) + 11 = 4 + (9 + 11)$

Associative Property of Multiplication

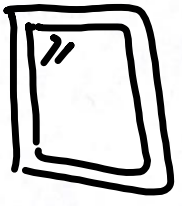
$(k \times l) \times m = k \times (l \times m)$ $\quad (9 \times 4) \times 5 = 9 \times (4 \times 5)$

Additive Identity

$n + 0 = n$ $\quad 12 + 0 = 12$

Additive Inverse

$v + (-v) = 0$ $\quad 4 + (-4) = 0$



Multiplicative Identity

$p \cdot 1 = p$ $\quad 18 \cdot 1 = 18$

Multiplicative Inverse

$x \cdot \frac{1}{x} = 1$ $\quad 5 \cdot \frac{1}{5} = 1$

Distributive Property

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Commutative: + and ×
order doesn't matter

associative: + and ×
grouping doesn't matter

identity: +0 or ×1
get back what you started with

distributive: spread out the multiplication

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Lesson 5 Reteach

Algebra: Properties

Property	Symbols	Numbers
Commutative	$a + b = b + a$ $a \cdot b = b \cdot a$	$5 + 3 = 3 + 5$ $5 \cdot 3 = 3 \cdot 5$
Associative	$(a + b) + c = a + (b + c)$ $(a \cdot b) \cdot c = a \cdot (b \cdot c)$	$(2 + 3) + 4 = 2 + (3 + 4)$ $(2 \cdot 3) \cdot 4 = 2 \cdot (3 \cdot 4)$
Identity	$a + 0 = a$ $a \cdot 1 = a$	$5 + 0 = 5$ $5 \cdot 1 = 5$

Example 1

Determine whether 6 + (4 + 3) and (6 + 4) + 3 are equivalent.

The numbers are grouped differently. They are equivalent by the Associative Property. So, 6 + (4 + 3) = (6 + 4) + 3.

Use the properties to make mental math easier.

Example 2

The formula for the perimeter of a triangle is $P = a + b + e$, where a, b, and e are side lengths. Find the perimeter of a triangle where $a = 12$, $b = 5$, and $e = 8$.

$P = a + b + c$	Write the formula.
$P = 12 + 5 + 8$	Replace a with 12, b with 5, and c with 8.
$P = 12 + 8 + 5$	Commutative Property
$P = 25$ units	

Exercises

Determine whether the two expressions are equivalent. If so, tell what property is applied. If not, explain why.

1. 9 • 1 and 9 yes; identity
2. 7 • 3 and 3 • 7 yes; commutative
3. 6 − (3 − 2) and (6 − 3) − 2 No, because 6-1=5 3-2=1 the associative prop does not work for subtraction
4. (10 • 2) • 5 and 10 • (2 • 5) yes; associative
5. The formula for the volume of a rectangular prism is $V = \ell wh$, where ℓ is the length, w is the width, and h is the height. Find the volume of a rectangular prism, in cubic units, if the length is 8 units, the width is 11 units, and the height is 10 units. Use the Commutative Property.

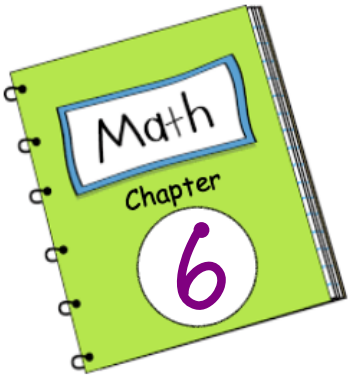
$V = \ell \cdot w \cdot h$

$= 8 \cdot 11 \cdot 10$

$= 8 \cdot 10 \cdot 11$

$= 80 \cdot 11$

$= 880$ cubic units



TITLE: Expressions

Date	Lesson	Topic/Assignment
2/17	1	Powers and Exponents Video Notes
2/19	1	HOMEWORK: Pg437 WS
2/22	2	Order of Operations Video Notes
2/23	2	HOMEWORK: Pg445 WS
2/23	2	CLASSWORK: Pg447 WS
2/26	3	Variables and Expressions Video Notes
3/2	3	CLASSWORK: Pg453 WS
3/3	3	HOMEWORK: Skills Practice WS
3/4	4	Writing Expressions Video Notes
3/5	4	Pg464 Examples
3/5	4	Skills and HW Practice WS
3/9	5	Properties In-Class Notes
3/9	5	CLASSWORK: Reteach WS
3/10	5	HOMEWORK: Skills Practice WS
3/10	5	CLASSWORK: Homework and Extra Practice WS
3/11	6	Distributive Property Video Notes
3/12	6	HOMEWORK: Pg488 WS

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Welcome to our class
IN THIS CLASSROOM WE DON'T give up, BUT WE DO give our best effort
HARD WORK PAYS OFF
WELCOME
6th Grade Homework
Skills Practice WS
Due Thursday: THQ
ALEKS

March 9, 2021

Homework:

Lesson 5 Skills Practice

Algebra: Properties

Determine whether the two expressions are equivalent. If so, tell what property is applied. If not, explain why.

1. $2 \cdot (3 \cdot 7)$ and $(2 \cdot 3) \cdot 7$

2. $6 + 3$ and $3 + 6$

3. $26 - (9 - 7)$ and $(26 - 9) - 7$

4. $18 \cdot 1$ and 18

5. $7 \cdot 2$ and $2 \cdot 7$

6. $6 - (4 - 1)$ and $(6 - 4) - 1$

7. $7 + 0$ and 7

8. $0 + 12$ and 0

9. $625 + 281$ and $281 + 625$

10. $(12 \cdot 18) \cdot 5$ and $12 \cdot (18 \cdot 5)$

11. $2 + (8 + 2)$ and $(2 + 8) + 2$

12. $40 \div 10$ and $10 \div 40$

Use one or more properties to rewrite each expression as an expression that does not use parentheses.

13. $(p \cdot 1) \cdot 6$

14. $(a + 5) + 23$

$a + (5 + 23)$
$a + 28$

15. $7 \cdot (y \cdot 3)$

16. $(b + 4) + 17$

17. $6 + (x + 50)$

18. $(y \cdot 200) \cdot 2$