

Package 3 Pre-Test

Find the Greatest Common Factor

1. 14 and 24
2. 15 and 64
3. 72 and 99

Find the Least Common Multiple

1. 22 and 6
2. 9 and 14
3. 25 and 51

Identify the Math Property in use

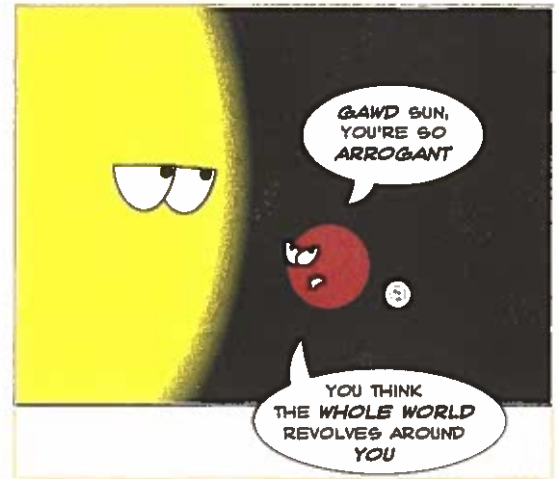
1. $a(1/a) = 1$
2. $f(0) = 0$
3. $ad = da$
4. $(a+b) + c = a + (b+c)$

Solve the problems using the Distributive Property

1. $17(2+3)$
2. $(5+ 12) 3$

Solve the Exponents

1. 12^3
2. 3^5
3. $2/5^3$



GCF and LCM

For more work with GCF and LCM, go to http://www.mathplayground.com/howto_gcf lcm.html

Greatest Common Factor (GCF): The largest factor that divides into two num-

GCF Example:

Find the GCF of 12 and 15

Factors of 12: 1,2,3,4,6,12 Common Factors: 1,3

Factors of 15: 1,3,5,15 3 is the greatest common factor of 12 and 15

*Reminder: Factor are numbers multiplied together that create another number

Factors of 20 are 1,2,4,5,10,20

Because $1 \times 20 = 20$ $2 \times 10 = 20$ $4 \times 5 = 20$

Least Common Multiple (LCM): The smallest number (not zero) that two numbers will divide into evenly

*Reminder: Multiples are numbers that result from multiplying a number by another number

Ex: Multiples of 6 are 6,12,18,24,30,36,42,48....

Zero is not a multiple

LCM Example:

Find the LCM of 6 and 9

Multiples of 6 —

6,12,18,24,30,36,42,48,54,60...

Multiples of 9 —

9,18,27,36,45,54,63,72...

Common multiples of 6

and 9 include 18,36,54

18 is the smallest so 18

is the LCM

Practice! Find the GCF of...

100 and 15

18 and 6

20 and 40

17 and 85

5 and 12

Practice! Find the LCM of...

5 and 50

17 and 35

12 and 16

3,4, and 12

5,3, and 9

FUN FACTS!

The "sixth sick sheik's sixth sheep's sick" is believed to be the toughest tongue twister in the English lan-

Greatest Common Factor

Write the greatest common factor of each set of numbers.

1. 140 and 120 _____

2. 84 and 231 _____

3. 315 and 60 _____

4. 40 and 168 _____

5. 270 and 180 _____

6. 168 and 189 _____

Find the greatest common factor for each pair of numbers.

7. 28, 36

8. 12, 16

9. 9, 15

10. 12, 22

11. 10, 15

12. 10, 20

13. 6, 8

14. 6, 10

15. 3, 9

16. 7, 9

17. 4, 8

18. 5, 7

Find the largest common factor of each group of numbers.

19. 8, 18

20. 27, 9

21. 63, 36

22. 49, 42

23. 27, 18, 36

24. 45, 35, 50

25. 7, 5, 9

26. 16, 12, 24

27. 18, 6, 24

28. 50, 20, 30

Least Common Multiple

Write the LCM for each set of numbers.

1. 6 and 9 _____
2. 7 and 2 _____
3. 8 and 3 _____
4. 5 and 4 _____
5. 2 and 9 _____
6. 9 and 3 _____

Write the LCM for each set of numbers.

7. 5 and 9 _____
8. 2 and 3 _____
9. 6 and 9 _____
10. 3, 5, and 6 _____
11. 3, 6, and 15 _____
12. 4, 6, and 7 _____
13. 4, 6, and 10 _____
14. 2, 3, and 12 _____

Write the LCM for each set of numbers.

15. 7 and 4 _____
16. 3, 6, and 8 _____
17. 4, 6, and 9 _____
18. 2, 4, and 7 _____
19. 3, 4, and 6 _____
20. 2, 5, and 9 _____

Write the LCM for each set of numbers.

21. 3, 6, and 11 _____
22. 4, 6, and 12 _____
23. 3, 6, and 7 _____
24. 6 and 12 _____
25. 3 and 13 _____
26. 6 and 9 _____

Math Properties Review



Math Properties are proven rules and patterns that make math easier!

Associative Property

Addition

$$(a+b)+c=a+(b+c)$$

$$(3+6)+5 = 3+(5+6)$$

$$14 = 14$$

Multiplication

$$(ab)c = a(bc)$$

$$(3 \times 2)5 = 3(2 \times 5)$$

$$30 = 30$$

Commutative Property

Addition

$$a+b = b+a$$

$$8+6 = 6+8$$

Multiplication

$$ba = ab$$

$$6(5) = 5(6)$$

$$30 = 30$$

Distributive Property

$$a(b+c) = ab + ac$$

$$4(2+5) = 4(2) + 4(5)$$

$$28 = 28$$

$$b(c-a) = bc - ba$$

$$5(6-2) = 5(6) - 5(2)$$

$$20 = 20$$

Properties of Equality

Addition : if $a = b$, then $a + c = b + c$

Subtraction: If $a = b$, then $a - c = b - c$

Multiplication: If $a = b$, then $ac = bc$

Division: If $a = b$, and $c \neq 0$, then $a/c = b/c$

Substitution: If $a = b$, then b can replace a in any expression

Reflexive: $a = a$

Symmetric: If $a = b$, then $b = a$

Transitive: If $a = b$ and $b = c$, then $a = c$

Identity Property

Addition

$$a+0 = a$$

$$4+0 = 4$$

Multiplication

$$1a = a$$

$$1(8) = 8$$



Grade 6

Inverse Property

Addition

$$a + (-a) = 0$$

$$3 + (-3) = 0$$

Multiple

$$A(1/a) = 1 \text{ when } a \text{ is not } 0$$

$$8(1/8) = 1$$

For more work with Math Properties, go to!
<http://www.mathsisfun.com/associative-commutative-distributive.html>

Zero Property of Multiplication

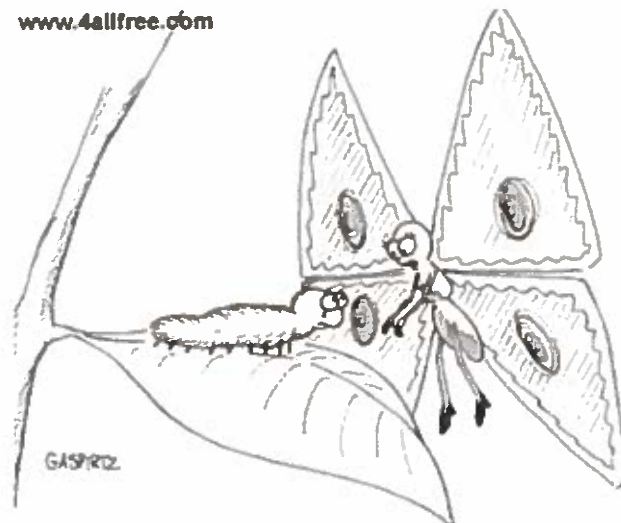
$$a \times 0 = 0$$

$$15(0) = 0$$

Zero Product Property

If $ab = 0$ then $a = 0$ or $b = 0$

www.4allfree.com



It's not you. It's me. I've changed.

Practice!

Which Property is shown?

1. If $a = b$, then $ac = bc$
2. $ab = ba$
3. $a + 0 = a$
4. $a(b - c) = ab - ac$

Solve the problems using one of the Math Properties

1. $6(0) =$
2. $7(5+8) =$
3. $2(4 \times 9) =$
4. $(5 + 9)2 =$
5. $999(1/999) =$

Properties of Integers

Write which property is used.

1. $8 \times (3 + 6) = (8 \times 3) + (8 \times 6)$

2. $-55 + 0 = -55$

3. $-14 \times -8 = -8 \times -14$

4. $8 + (11 + -5) = (8 + 11) + -5$

5. $0 + -16 = -16$

6. $11 \times (-4 + -5) = (11 \times -4) + (11 \times -5)$

7. $(-12 \times 4) \times -3 = -12 \times (4 \times -3)$

8. $66 + -98 = -98 + 66$

Use the properties to solve the equations.

9. $-36 + x = -36$

10. $n \times -11 = -11 \times 9$

11. $(-11 \times -5) + (-11 \times 6) = n \times (-5 + 6)$

12. $19 \times (n + -4) = (19 \times -5) + (19 \times -4)$

13. $14 + 17 = 17 + n$

14. $1 \times n = -55$

15. $(6 + -11) + n = 6 + (-11 + -13)$

16. $36 + -15 = n + 36$

17. $n \times -18 = -18$

18. $0 + n = -75$

19. $8 \times (4 + -10) = (8 \times n) + (8 \times -10)$

20. $n + (-12 + -13) = (-9 + -12) + -13$

Exponents

Exponents: Numbers that say how many times the multiply the number of interest

$$5^3 \quad \text{Exponent}$$

This equation is referred to as “5 to the third power” or “five to the power 3”

*Exponents can also be referred to as powers.

To solve questions involving exponents, multiply the number of interest by itself as many times as the exponent dictates

$$5^3 \Rightarrow 5 \times 5 \times 5 = 125$$

Practice!

Write the exponent from the word problem

1. Seven to the fifth power
2. 10 to the power of 2
3. 5 to the third power

Solve the exponent

1. 3^4
2. 7^5
3. 9^1

For more work with Exponents, go to!
<http://www.mathsisfun.com/exponent.html>

**Where do hamburgers
go to dance?**

To the meatball.



Name: _____ Date: _____

EXPRESSIONS AND EQUATIONS – Numerical Expressions With Exponents

CCSS Math Content 6.EE.A.1: Write and evaluate numerical expressions involving whole-number exponents.

SHARPEN YOUR SKILLS:

Evaluate.

1. 4^3

4. $5^4 - 10^2$

2. $6^2 + 3$

5. $45 - (8^3 \div 4^2)$

3. $(2 + 7)^2$

6. $(2^5 - 3^3)^4 + 23$



APPLY YOUR SKILLS:

Mrs. Booth asks her students to evaluate the expression $(8 - 3)^3 - 2^5 + 4^3$. The work of two students is shown below. Which student evaluated the expression correctly? Identify and explain the mistake(s) the other student made.

Student #1

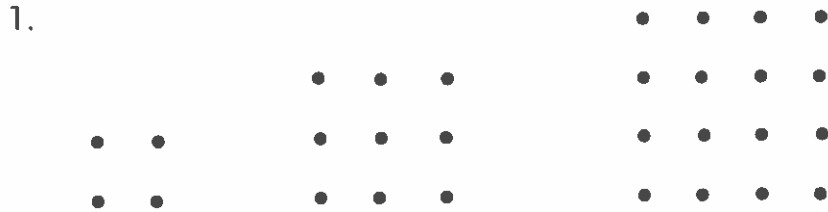
$$\begin{aligned} (8 - 3)^3 - 2^5 + 4^3 &= 5^3 - 2^5 + 4^3 \\ &= 125 - 32 + 64 \\ &= 93 + 64 \\ &= 157 \end{aligned}$$

Student #2

$$\begin{aligned} (8 - 3)^3 - 2^5 + 4^3 &= 5^3 - 2^5 + 4^3 \\ &= 125 - 32 + 64 \\ &= 125 - 96 \\ &= 29 \end{aligned}$$

Exponents

Here are three square numbers. Please draw a picture to represent 5 squared or 5^2 . Name three square numbers greater than 95.



Write the number represented by each exponent.

2. $5^2 = \underline{\quad}$

3. $7^3 = \underline{\quad}$

4. $4^3 = \underline{\quad}$

5. $8^3 = \underline{\quad}$

6. $3^4 = \underline{\quad}$

7. $5^4 = \underline{\quad}$

8. $3^3 = \underline{\quad}$

9. $2^5 = \underline{\quad}$

10. $6^3 = \underline{\quad}$

Add or subtract.

11. $2^2 + 2^2 =$

12. $3^3 - 2^2 =$

13. $5^2 + 2^3 =$

14. $6^2 + 4^3 =$

15. $4^2 - 2^3 =$

16. $9^3 + 6^2 =$

17. $7^2 - 3^3 =$

18. $8^2 - 3^3 =$

Solve.

19. $9^2 - 8^2 =$

20. $5^3 \div 3 =$

21. $6^2 \div 9 =$

22. $10^2 \div 5 =$

23. $65 - 7^2 =$

24. $7^2 - 3^2 =$

Package 3 Post-Test

Find the Greatest Common Factor

1. 100 and 28
2. 63 and 18
3. 24 and 64

Find the Least Common Multiple

1. 12 and 56
2. 70 and 43
3. 52 and 15

Identify the Math Property in use

1. $11+5 = 5+11$
2. $1(c) = c$
3. $ab(d) = a(bd)$
4. $(a-b)c = ac-bc$

Q: When should you keep an eye on your cheese?
A: When it's up to no Gouda.

Solve the problems using the Distributive Property

1. $20(13-7)$
2. $(7+ 10) 5$

Solve the Exponents

1. 15^4
2. $2^5 + 5(4^3)$
3. $6/10^3$

Q: What do you call cheese that is sad?
A: Blue cheese.