

I. Counting Numbers and Whole Numbers

The counting numbers:

Write the counting numbers as: _____

The whole numbers:

Write the whole numbers as: _____

II. Addition with Whole Numbers

Addition:

$$4265 + 183$$

Words For Addition

Reminders For Addition

3. Add: $50 + 125 + 3060$

4. Add: $68 + 321 + 4759$

III. Subtraction with Whole Numbers

Subtraction:

$$5102 - 613$$

Words For Subtraction

Reminders For Subtraction

5. Subtract: $1083 - 729$

6. Subtract: $9804 - 562$

IV. Multiplication with Whole Numbers

Multiplication:
 423×160

Words For Multiplication:

Reminders For Multiplication:

1. Multiply the ones place of the second factor by each digit in the first factor.
2. Repeat with the tens place. Remember it is the tens place, put a zero in ones place to hold its place.
3. Continue with each digit in second factor.
4. Add the partial products

7. Write five times eleven using four different symbols.

8. Multiply: 982×67

V. Division with Whole Numbers

Division:
 $2046 \div 15$

Words For Division:

Reminders For Division:

Divide – Multiply –
Subtract – Bring Down

9. Write forty-five divided by 5 using four different symbols.

10. Divide: $408 \div 6$

11. Divide $435 \div 7$

12.

VI. Change Word Sentences to Mathematical Equations

What is the result when the sum of 7 and 4 is subtracted from the product of 9 and 3?

What is the quotient of the product of 10 and 5 and the sum of 18 and 7?

15. When the product of 44 and 5 is divided by the sum of 12 and 10, what is the quotient?

16. When the sum of 6 and 7 is subtracted from the product of 8 and 2, what is the difference?

VII. Parentheses

When parentheses are in a math statement, simplify within the parentheses first.

$$11 + (3 + 4)$$

$$20 - (6 + 8)$$

$$25 \div (5 \times 1)$$

$$8 \times (16 \div 4)$$

I. Problem Solving

Explore

- _____ the question.
- What _____ is given?
- What is the question asking you to _____?
- Is there information that is not _____?

Plan

- Select a _____ for solving the problem. There may be several you can use.
- It is usually helpful to _____ the answer.

Solve

- _____ your plan.
- If your plan doesn't work, _____ until you find one that does work.
- Include labels or _____ in your _____.

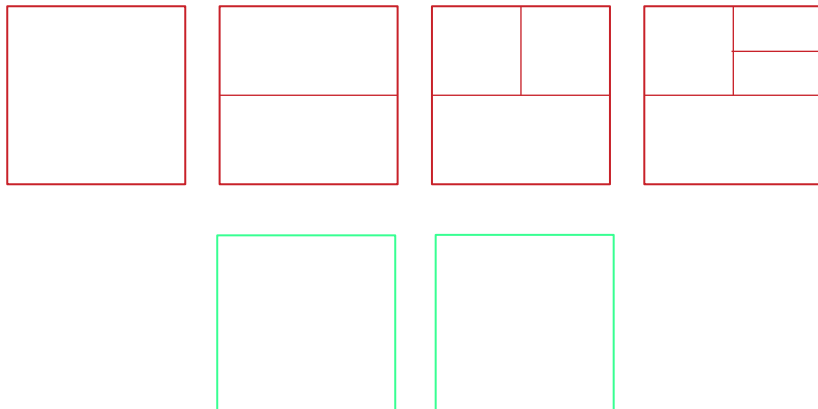
Check

- Does your answer make _____ given the facts in the question?
- Is your answer _____ compared to your estimate?
- If your answer is _____ correct, make a new plan and _____.

Problem-Solving Strategies

act it out
use a graph
make a model
work backward
draw a diagram
guess and check
look for a pattern
use logical reasoning
eliminate possibilities
make an organized list
solve a similar problem
estimate reasonable answers

Draw the next two figures in the pattern.



II. Practice Problem Solving : ALWAYS show work

Tricia wants to buy a camera that costs \$250 with tax. So far, she has saved \$190. If she saves \$5 a week, in how many weeks will she be able to purchase the camera?

Explore

Solve

Plan

Check



6. Nathaniel had 101 lettuce seeds in his left pocket and 15 in the right pocket. He found 17 more seeds in his cuff. Find how many seeds he had in all?

Left
Pocket

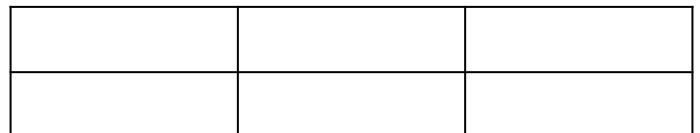
Right
Pocket

cuff

7. Mr. Thankful is serving fried turkey at 5:00 P.M. The 11-pound turkey has to remain in the fryer 2 minutes for every pound and must cool for at least 25 minutes before it is carved. What is the latest time he can start frying?



8. What is the total number of rectangles in the figure below? (Hint: There are more than 6.)



I. Forms of Writing Money

1 dollar = ____ cents

A decimal separates
dollars and cents
ONLY when using
the _____ sign.

Using a dollar sign:

\$ _____ is read forty-three dollars and twenty-five cents

Using the cents sign:

_____ ¢ is read fifty cents

DO NOT use a decimal with a cent sign. *0.5¢ means 5 tenths of a cent*

II. Writing Money with Cents and Dollars.

eighty-five cents

\$ _____ ¢

thirty-six cents

\$ _____ ¢

III. Writing Money With a Dollar Sign and Two Digits for Cents.

\$4 = \$ ____ . ____

25¢ = \$ ____ . ____

214¢ = \$ ____ . ____

IV. Operations with Money.

 $42¢ + \$22.17 + \5 *To add Money*4. $\$19 + \$23.28 + 87¢$ $\$29.46 - 65¢$ *To subtract Money*5. $\$25.85 - 36¢$

$70¢ \times 3$

To Multiply Money

6. $86¢ \times 9$

7. $\$39.84 \times 5$

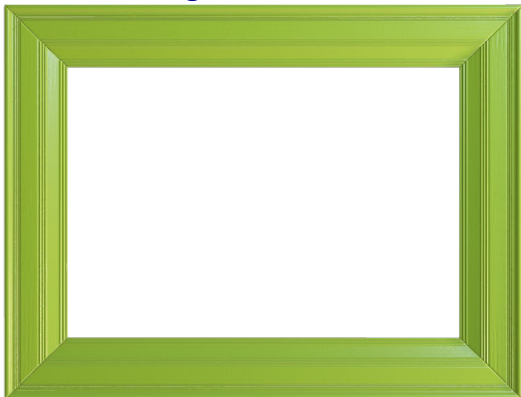
$\$49.02 \div 6$

To Divide Money

8. $\$39.83 \div 7$

V. Correctly Writing Sale Signs

A young farmer is selling hatching chicken eggs at 30 cents per egg. You have been hired to make a sign.



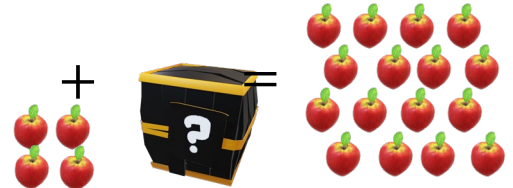
A Bakery has hired you to make a sign for the cakes. The cost is ten dollars and fifty cents for size small.



I. Definitions

variable:

The employee at the grocery store knew there were sixteen apples available for sale. 4 apples were on the shelf and a box of apples were stored in the back. How many apples must be in the box?

algebra:**algebraic expression:**

$$4 + a = 16$$

II. Inverse Operations

$$\begin{array}{r} 16 \\ - 4 \\ \hline \end{array} \qquad \begin{array}{r} 4 \\ + \quad \\ \hline 16 \end{array} \qquad \begin{array}{r} \quad \\ + 4 \\ \hline 16 \end{array}$$

Addition and _____ are inverse operations.

$$\begin{array}{r} 2 \\ \times \quad \\ \hline 10 \end{array} \qquad \begin{array}{r} 2 \\ \overline{) 10} \end{array} \qquad 2 \overline{) 10}$$

Multiplication and _____ are inverse operations.

III. Solve for the Variable in Addition Equations.

$$\begin{array}{r} 16 \\ + N \\ \hline 45 \end{array}$$

$$\begin{array}{r} N \\ + 12 \\ \hline 38 \end{array}$$

To solve for a missing
addend

$$\begin{array}{r} 3. \quad b \\ + 3 \\ \hline 26 \end{array}$$

$$\begin{array}{r} 4. \quad 16 \\ + n \\ \hline 16 \end{array}$$

$$\begin{array}{r} 5. \quad 401 \\ + p \\ \hline 465 \end{array}$$

$$\begin{array}{r} 6. \quad m \\ + 98 \\ \hline 120 \end{array}$$

IV. Solve for the Variable in Subtraction Equations.

$$\begin{array}{r} N \\ - 25 \\ \hline 54 \end{array}$$

To solve for a missing **minuend**

$$\begin{array}{r} 78 \\ - N \\ \hline 61 \end{array}$$

To solve for a missing **subtrahend**

7.
$$\begin{array}{r} p \\ - 18 \\ \hline 18 \end{array}$$

8.
$$\begin{array}{r} 20 \\ - w \\ \hline 5 \end{array}$$

9.
$$\begin{array}{r} 416 \\ - R \\ \hline 120 \end{array}$$

10.
$$\begin{array}{r} 165 \\ - 7 \\ \hline d \end{array}$$

V. Solve for the Variable in Multiplication Equations.

$$\begin{array}{r} 10 \\ \times N \\ \hline 40 \end{array}$$

$$\begin{array}{r} N \\ \times 11 \\ \hline 88 \end{array}$$

To solve for a missing **factor**

11.
$$\begin{array}{r} S \\ \times 6 \\ \hline 36 \end{array}$$

12.
$$\begin{array}{r} 25 \\ \times h \\ \hline 75 \end{array}$$

VI. Evaluate algebraic expressions

Evaluate each algebraic expression when $a = 1$, $b = 2$, and $c = 3$

$$a + 5$$

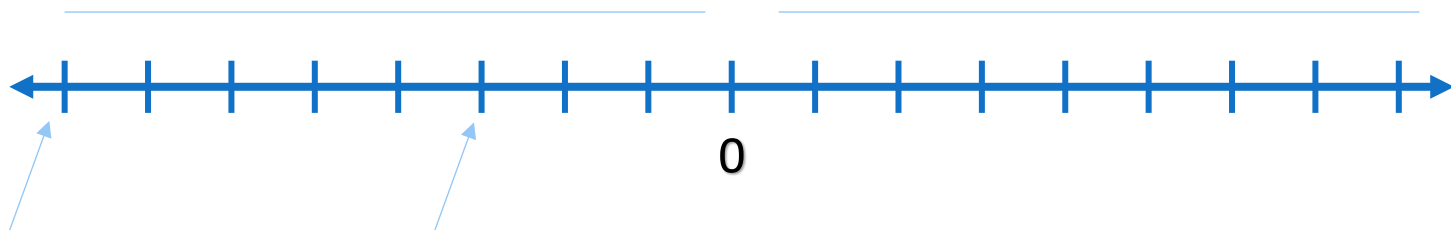
$$a + b$$

$$13. c - b$$

$$14. (b)(c)$$

To evaluate **algebraic expressions**

I. The Number Line



Integers:

Sam was invited to go Kayaking with his friends. He was told to bring his life preserver, lunch and sunglasses. When he arrives at the kayak launch, his mom drops him off and leaves. Unfortunately, Sam does not have a whistle on his life preserver. He must have a whistle to launch the kayak. He can buy a whistle for \$4. He realizes he has \$3 with him, what should he do?



\$4.00

Negative Numbers:

II. Comparison Symbols

<

=

>



5 ____ 7

-5 ____ 7

4 ____ -4

-2 ____ -3

7.

5 ____ -4

2 ____ -7

-6 ____ -7

-1 ____ 0

III. Arrange Numbers in Numerical Order:

0, 5, 4

2, 0, -2

8. -1, 4, -3

9. -8, 5, 0

IV. Use Words with Comparison Symbols

Four is less than five

Four less than five

< is less than
> is greater than
= is equal to, is

What number is three less than five?

Three less than fifteen is greater than the sum of two and four.

V. Simplifying and Comparing Quantities

$$4 + 2 \quad \underline{\hspace{1cm}} \quad 12 \div 3$$

The **sum of four and two** is _____
the _____ of twelve and three.

$$1 \cdot 1 \quad \underline{\hspace{1cm}} \quad 1 \div 1$$

One _____ **one** is _____
one _____ **one** .

$$3(5) \text{ — } 2 \cdot 8$$

15.

I. Definitions

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

The center dot indicates
_____.

The _____ tells how
many times the _____ is
used as a factor.

$$4 \cdot 4 \cdot 4 \cdot 4 \cdot 4 = \underline{\quad} =$$

Common factors

The _____ is the common factor.

Numbers expressed using exponents are called _____.

Symbols	Words
5^2	five to the second power or five squared
4^3	four to the third power or four cubed
3^4	Three to the fourth power

II. Write Powers As A Product Of The Same Factor.

$$3^5$$

To write powers as a product
of the same factor:

$$2^6$$

$$15^2$$

$$4. \quad 3^3$$

$$5. \quad 6^4$$

III. Write Powers in Standard Form

Evaluate each expression

$$2^6$$

$$15^2$$

8. 3^3

9. 6^4

To evaluate **exponential expressions**

Standard Form:

Exponential Form:

$$4^1 =$$

When a number does not have an exponent, it is understood to be 1.

IV. Write Numbers in exponential Form

$$(3)(3)(3)(3) =$$

$$2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 =$$

10. $6 \cdot 6 \cdot 6 =$

11. $(9)(9)(9)(9) =$

V. Evaluate algebraic expressions with exponents

Evaluate each algebraic expression when $a = 4$, $b=2$, and $c=3$

$$a^2$$

$$b^c$$

12. b^a

13. a^b

I. Checks

Check Fraud: When a person intentionally or deliberately writes or uses checks illegally. Only use checks associated with your account, for amounts less than the balance in the account.

PAY: The person receiving the check

The Format of the date:

Successful Student 100 Percent Path Working Hard, Always 12345	Date _____	1003
PAY TO THE ORDER OF _____	\$ _____	
The Bank Name 1234 Learning Way Math Class, USA		Dollars
For _____		
⑆ 1 2 3 4 5 6 7 8 9 ⑆	⑆ 2 3 ⑆ 4 5 6 7 ⑆	⑆ 0 0 3

Institution / Bank Name
and address

Write the amount of the check in words and in numerals.

Use the word **AND**

II. Checkbook Register / Ledger

A Ledger / Check Register is used to record transactions in an account.

Check Number	Date	Description of Transaction	Debits (-)		Credits (+)		Balance	
1001	6/1	Digital Camera	525	20			350	42
1002	7/10	6 assorted chicks	15	73				

III. Decimal Places

billions	Hundred millions	Ten-millions	millions	Hundred-thousands	Ten-thousands	thousands	hundreds	tens	ones	. (and)	tenths	hundredths	thousandths	Ten-thousandths
1	2	3	4	5	6	7	8	9	0	.	1	2	3	4
One	Two hundred thirty-four			Five hundred sixty-seven			Eight hundred ninety			and	One thousand, two hundred thirty-four			
3.										.				
4.										and				

IV. Decimal Operations

Every number has a decimal point. If it is not written, it is to the right of the last digit.

Write the numbers with a decimal point.

423

5. 6,325

Always line up the decimal for addition and subtraction!

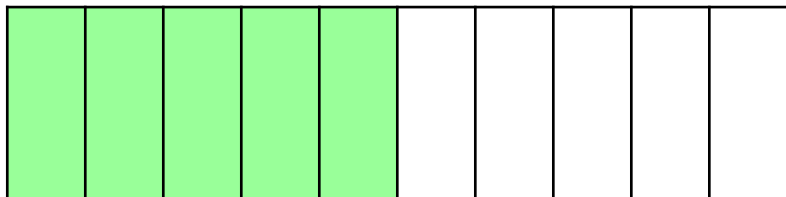
410 + 1.25

6. 5.78+1.924

1500 – 140.09

7. 7200 – 963.8

Multiply: $.5 \times .5$



1. Multiply
2. Move the decimal point to the left the same number of decimal places as the sum of decimal places in the factors.

Multiply: 120.1×15.25

7. Multiply: 18.3×9.4

Divide: $150 \div 2.5$

8. Divide: $4.32 \div 0.8$

1. Move the decimal for the divisor to the right to make it a whole number.
2. Move the decimal point the same number of places in the dividend.
3. Bring the Decimal UP
4. Divide

Warmup: Complete these before watching the video

Addition

$$6 + 9$$

Subtraction

$$4 - 2$$

Multiplication

$$9(4)$$

Division

$$8 \div 2$$

Parentheses

$$4 + (2 + 8)$$

Parentheses

$$20 \times (6 + 8)$$

Exponents

$$3^4$$

Exponents

$$12^2$$

I. Numerical Expressions

Match the expression with the correct label.

$$15 \div 5 + (3^4 - 2) \times 10$$

$$15 \div 5 + (x^4 - 2)$$

$$5(x + 7)$$

$$4 + (2^3 - 5) - 9$$

Numerical Expression

Algebraic Expression

Numerical Expression:

Numbers and at least one operation.

Parentheses

Simplify inside the parentheses first

Exponents

Simplify Exponents

Multiplication or Division

Multiplication or Division are equal in rank.
Simplify from left to right.

Addition or Subtraction

Addition or Subtraction are equal in rank.
Simplify from left to right.

From Left to Right

II. Order of Operations

$$(8 - 3) \times (4 + 2)$$

$$3. (7+5) \times (2+1)$$

$$4. (4 \times 2) \times (10-7)$$

$$16 - 4 \times 2 + 5$$

$$5. 8 \div 2 + 25 \times 5$$

III. Expressions with Exponents

$$45 - (3 \times 2)^2$$

$$6(10 - 6)^2 \div 4$$

$$6. (4 + 1)^2 + 6$$

$$7. (2 + 3)^2 + 7(1)$$

$$8. 4(2 + 5)^2 + 4$$

IV. Complex Numerical Expressions

$$5 + (8 - 3)^2 \div (3 + 2)$$

Parentheses

Exponents

Multiplication or Division

Addition or Subtraction

$$9. 10 - (4 + 6)^2 \div (5 \cdot 5)$$

V. Problem Solving: Using Expressions

The distance around a geometric figure is called the **perimeter**. Write a numerical expression to find the perimeter of a stop sign if each side is 12 Inches long, then evaluate the expression.



Drink	\$ 1.75
Hamburger	\$ 8.50
Fries	\$ 1.00
Ice Cream	\$ 2

10. The Villa family went out to eat to celebrate Tom's 5th birthday. There are 8 people in the family. Each person in the family ordered a drink, hamburger, and fries. The six children all ordered an ice cream for dessert. Write an expression to find the cost of the meal, then evaluate the expression.

VI. Challenge: Evaluate Algebraic Expressions after substitution.

Evaluate $(b + c)^2 - a$ when $a=3$, $b=4$ and $c=2$

11. Evaluate $a(b + c) + 10$ when $a=2$, $b=9$ and $c=1$