

Hey There!

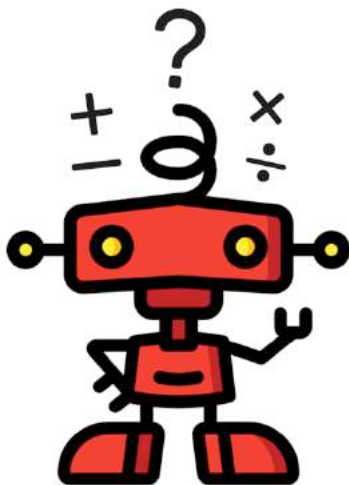
## Welcome to 101 Daily Math Challenges Volume 2!

You're probably here because you know that the key to getting your kids excited about practicing and learning math is to make the materials fun and engaging.

This workbook shares a massive collection of math puzzles and challenges that are super fun to solve and a sure way to get your kids thinking and problem-solving creatively and mathematically (and even algebraically, way before they ever step foot inside of an algebra class!).

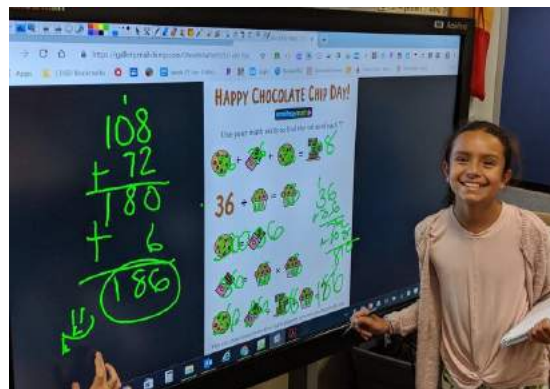
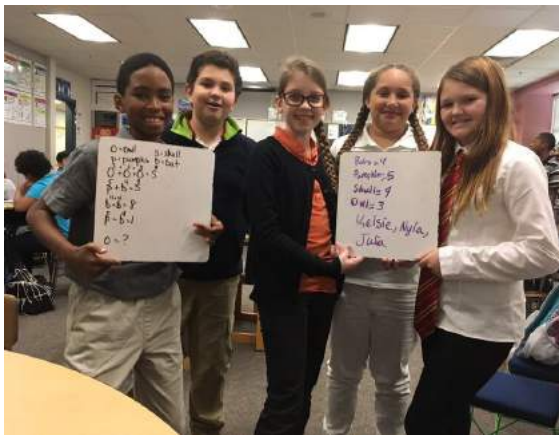
The activities are ideal for students at the elementary and middle school levels (grades 1-8) and can be done at home and/or in the classroom.

Enjoy :)



## A Few Ideas for How to Use the Activities in This Workbook

- As warm-ups or exit activities at the beginning or end of class.
- As extra credit or homework assignments.
- As a component to lessons on topics including problem-solving, order or operations, fractions, decimals, area models, negative numbers, and more!
- As a supplement for differentiating pre-existing lessons to provide more opportunities for visual, collaborative, and/or hands-on learning



# TABLE OF CONTENTS

How can you use this workbook? .....	02
<b><u>Math Challenges</u></b>	
Elementary Level 1 (1-10) .....	05
Elementary Level 2 (11-20) .....	17
Intermediate Level 1 (21-30) .....	29
Intermediate Level 2 (31-40) .....	41
Advanced Level 1 (41-50) .....	53
Advanced Level 2 (51-60) .....	65
Negative Numbers (61-70) .....	77
Fractions and Decimals (71-80) .....	89
Multiplication Tables & Area Models (81-96) .....	101
Bonus Puzzles (97-101) .....	119
Answer Key .....	125
Review: GEMS Method .....	130
How to Print (PDF Version) .....	131
About Mashup Math .....	132

# HELPFUL HINT #1

Symbols represent numbers.

Example A

If  $2 + \text{star} = 9$

then  $\text{star} = 7$

Example B

If  $\text{rabbit} + \text{rabbit} = 8$

then  $\text{rabbit} = 4$

## Challenges 1-10

# Elementary Level 1

**These puzzles incorporate the following:**

- Single and Double-Digit Addition and Subtraction
- Elementary Level Problem Solving and Logic
- Simple Algebraic Thinking
- Working with Variables and Symbolic Representation
- Substitution and Inverse Operations
- Commutative Property



Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #1

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Orange} + \text{Orange} + \text{Orange} = 15$$

$$\text{Orange} + \text{Cherry} + \text{Cherry} = 13$$

$$\text{Lemon} - \text{Cherry} = 6$$

$$\text{Orange} + \text{Lemon} + \text{Cherry} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #2

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Soda Icon} + \text{Soda Icon} = 16$$

$$\text{Soda Icon} + \text{Bowling Ball} + \text{Bowling Ball} = 20$$

$$\text{TV Icon} = 15 - \text{Bowling Ball}$$

$$\text{Soda Icon} + \text{TV Icon} + \text{Bowling Ball} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #3

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$36 = \text{fire} + \text{fire} + \text{fire}$$

$$\text{fire} - \text{tent} = 1$$

$$2 \times \text{chair} + \text{tent} = 15$$

$$\text{fire} + \text{chair} - \text{tent} = ?$$

? = \_\_\_\_\_



Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #4

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Blue Monster} + \text{Orange Monster} + 3 = \text{Green Monster}$$

$$21 - \text{Blue Monster} = 12$$

$$\text{Blue Monster} + \text{Blue Monster} = \text{Green Monster}$$

$$\text{Green Monster} - \text{Orange Monster} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #5

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Bread and Jam} + \text{Bread and Jam} = 32$$

$$\text{Bread and Jam} + \text{Toothbrush} = 22$$

$$\text{Toothbrush} + \text{Shirts and Iron} + \text{Shirts and Iron} = 20$$

$$\text{Bread and Jam} - \text{Shirts and Iron} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #6

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Wolverine} + \text{Wolverine} + \text{Wolverine} = 21$$

$$\text{Tent} + \text{Wolverine} = \text{Fossil}$$

$$\text{Tent} - \text{Wolverine} = 9$$

$$\text{Fossil} + \text{Tent} + \text{Wolverine} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #7

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{snail} + \text{sun} + \text{snail} = 40$$

$$29 = \text{snail} + \text{snail} + 1$$

$$\text{sun} = \text{hand} + \text{hand} + \text{hand}$$

$$\text{snail} + \text{hand} - \text{sun} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #8

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Spider-Man} - \text{Batman} = \text{Superman}$$

$$\text{Batman} + \text{Batman} - 3 = 17$$

$$\text{Batman} + \text{Superman} + \text{Superman} = 32$$

$$\text{Spider-Man} + \text{Superman} + \text{Batman} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #9

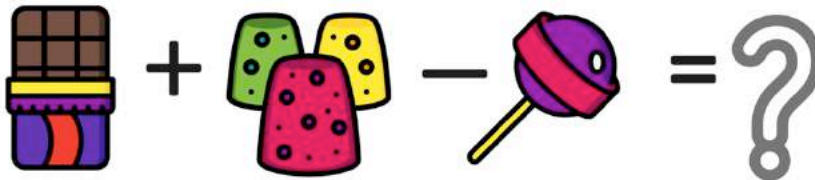
**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.


$$\text{Candy Set} + \text{Candy Set} = \text{Chocolate Bar}$$


$$\text{Candy Set} + \text{Lollipop} + \text{Lollipop} = 29$$


$$50 - \text{Chocolate Bar} = 24$$


$$\text{Chocolate Bar} + \text{Candy Set} - \text{Lollipop} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #10

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Sheep} + \text{Sleeping Panda} = 23 - 3$$

$$36 = \text{Sleeping Panda} + \text{Sleeping Panda} + \text{Sleeping Panda}$$

$$\text{Pillow} = \text{Sheep} + \text{Sheep}$$

$$\text{Sleeping Panda} + \text{Sheep} + \text{Pillow} = ?$$



? = \_\_\_\_\_

# HELPFUL HINT #1

Multiple symbols can have the same value.

Example

If  = 

and  +  = 6.

then  &  both equal 3.

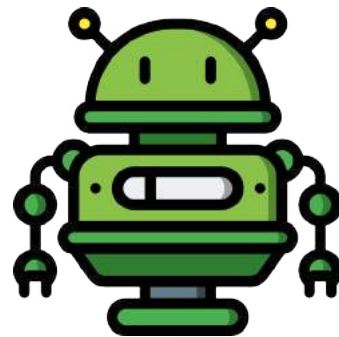


## Challenges 11-20

# Elementary Level 2

**These puzzles incorporate the following:**

- Double-Digit Addition and Subtraction
- Multi-Step Problem Solving and Logic
- Intermediate Algebraic Thinking
- Properties of Zero
- Substitution and Inverse Operations
- Commutative and Associative Property



Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #11

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Game Console} + \text{Game Console} + \text{Keyboard} = 27$$

$$\text{Game Console} = \text{Keyboard}$$

$$\text{Shoe} - \text{Game Console} = 27$$

$$2 \times \text{Car} = \text{Shoe}$$

$$\text{Car} + \text{Shoe} - \text{Game Console} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #12

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Ice Cream Cone} + \text{Watermelon} + \text{Ice Cream Cone} = 33$$

$$\text{Ice Cream Cone} + \text{Ice Cream Pop} + \text{Ice Cream Pop} = 27$$

$$\text{Ice Cream Pop} - \text{Ice Cream Sandwich} = 3$$

$$\text{Ice Cream Cone} = \text{Watermelon}$$

$$\text{Ice Cream Cone} + \text{Ice Cream Pop} + \text{Ice Cream Sandwich} + \text{Watermelon} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #13

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Camera} + \text{Easel} + \text{Easel} = 28$$

$$36 = \text{Camera} + \text{Paint} + \text{Camera}$$

$$\text{Easel} - \text{Printer} = \text{Printer}$$

$$\text{Camera} = \text{Paint}$$

$$\text{Easel} + \text{Printer} + \text{Paint} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #14

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Igloo} + 9 + \text{Wolf} = 25$$

$$\text{Wolf} = \text{Igloo}$$

$$\text{Penguin} + \text{Wolf} = 28$$

$$\text{Snowflake} + \text{Wolf} + \text{Igloo} = 30$$

$$\text{Igloo} + \text{Snowflake} - \text{Penguin} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #15

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$44 - \text{orange and glass} = 38$$

$$\text{plate with egg and bacon} + \text{plate with egg and bacon} + \text{plate with egg and bacon} = \text{coffee maker}$$

$$\text{orange and glass} = 15 - \text{plate with egg and bacon}$$

$$\text{coffee maker} - \text{toaster} = 23$$

$$\text{orange and glass} + \text{coffee maker} + \text{toaster} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #16

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$36 = \text{Green Robot} + \text{Green Robot} + \text{White Robot}$$

$$\text{White Robot} + \text{White Robot} = \text{Blue Robot}$$

$$\text{Yellow Robot} = \text{Blue Robot} - 17$$

$$\text{Green Robot} = \text{White Robot}$$

$$\text{Yellow Robot} + \text{Green Robot} + \text{White Robot} + \text{Blue Robot} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #17

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$45 = \text{Dog with bow} + \text{Dog with bow} + \text{Dog with bow}$$

$$\text{Dog with ears} = \text{Dog with bone} + \text{Dog with bone}$$

$$27 = \text{Dog with beard} + \text{Dog with bow} + \text{Dog with beard}$$

$$34 = \text{Dog with ears} + \text{Dog with ears} + 18$$

$$\text{Dog with beard} + \text{Dog with bow} - \text{Dog with bone} = ?$$

? = \_\_\_\_\_



Name: \_\_\_\_\_

Date: \_\_\_\_\_

# MATH CHALLENGE #18

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Spray Bottle} = 9 - 6 + 1$$

$$\text{Store} = \text{Scissors} + \text{Scissors}$$

$$\text{Jar} = \text{Store} - 3$$

$$10 + \text{Spray Bottle} = \text{Store}$$

$$\text{Jar} + \text{Scissors} - \text{Spray Bottle} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #19

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Soccer Ball} + \text{Gloves} + \text{Soccer Ball} = 7$$

$$\text{Jersey} + \text{Jersey} + \text{Goal} = 24$$

$$\text{Goal} - \text{Gloves} = 3$$

$$\text{Goal} = \text{Jersey}$$

$$\text{Soccer Ball} + \text{Goal} + \text{Jersey} + \text{Gloves} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

# MATH CHALLENGE #20

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Piggy Bank} = \text{Open Book} + \text{Calculator}$$

$$\text{Piggy Bank} + \text{Checkbook} + \text{Open Book} + \text{Calculator} = 40$$

$$24 - \text{Checkbook} = \text{Checkbook}$$

$$\text{Abacus 1} + \text{Abacus 2} = \text{Piggy Bank}$$

$$\text{Piggy Bank} + \text{Checkbook} - \text{Abacus 1} = ?$$



? = \_\_\_\_\_

# HELPFUL HINT #3

## Advanced Substitution

(Sometimes two symbols being equal to each other isn't always obvious)



### Example A



If  -  = 0,

then  = ,

because any number minus itself equals zero.

### Example B

If  ÷  = 1

then  = \*

because any non-zero number divided by itself equals one.

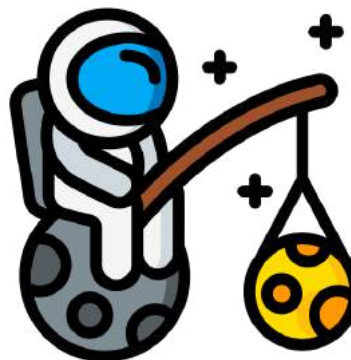
\* You can assume that  does not equal zero.

## Challenges 21-30

# Intermediate Level 1

**These puzzles incorporate the following:**

- Basic Multiplication and Division
- Double and Triple-Digit Operations
- Multi-Step Problem Solving and Logic
- Intermediate Algebraic Thinking
- Advanced Substitution and Inverse Operations
- Basic Order of Operations



Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #21

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Coffee Pot} \times \text{Milk Carton} = 90$$

$$11 \times \text{Coffee Pot} = 110$$

$$\text{Coffee Maker} = 14 - \text{Milk Carton}$$

$$\text{Coffee Beans} - \text{Coffee Maker} = 7$$

$$\text{Coffee Maker} \times \text{Coffee Beans} + \text{Milk Carton} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #22

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Pink Hair Woman} \times \text{Purple Hood Woman} = 81$$

$$\text{Orange Hair Man with Glasses} - \text{Pink Hair Woman} = 10$$

$$\text{Pink Hair Woman} \div \text{Purple Hood Woman} = 1$$

$$\text{Blue Hair Man} \times \text{Orange Hair Man with Glasses} = 38$$

$$\text{Pink Hair Woman} \times \text{Blue Hair Man} + \text{Orange Hair Man with Glasses} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #23

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Game Console} + \text{Game Console} + \text{Game Console} = 18$$

$$72 \div \text{Basketball Court} = \text{Basketball Hoop}$$

$$\text{Game Console} = \text{Basketball Court}$$

$$\text{Basketball Hoop} \times 2 = \text{Steering Wheel}$$

$$\text{Game Console} + \text{Basketball Hoop} + \text{Steering Wheel} + \text{Basketball Court} = ?$$

? = \_\_\_\_\_



Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #24

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\begin{array}{c} \text{Clownfish} \\ \text{Clownfish} \end{array} + \begin{array}{c} \text{Clownfish} \\ \text{Clownfish} \end{array} + \begin{array}{c} \text{Clownfish} \\ \text{Clownfish} \end{array} = 24$$

$$\text{Scuba Diver} + \begin{array}{c} \text{Clownfish} \\ \text{Clownfish} \end{array} + \text{Scuba Diver} = 26$$

$$\text{Coral Reef} = \text{Flippers}$$

$$63 \div \text{Scuba Diver} = \text{Coral Reef}$$

$$\text{Flippers} \times \begin{array}{c} \text{Clownfish} \\ \text{Clownfish} \end{array} - \text{Scuba Diver} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #25

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\begin{array}{c} \text{Sun} \\ \text{Hills} \end{array} + \begin{array}{c} \text{Sun} \\ \text{Hills} \end{array} - \begin{array}{c} \text{Snake} \\ \text{Bowl} \end{array} = 10$$

$$\begin{array}{c} \text{Sun} \\ \text{Hills} \end{array} + \begin{array}{c} \text{Snake} \\ \text{Bowl} \end{array} + \begin{array}{c} \text{Lamp} \\ \text{Sparkles} \end{array} = 21$$

$$\begin{array}{c} \text{Sun} \\ \text{Hills} \end{array} \times 4 = 32$$

$$\begin{array}{c} \text{Map} \\ \text{Roll} \end{array} \div \begin{array}{c} \text{Lamp} \\ \text{Sparkles} \end{array} = 2$$

$$\begin{array}{c} \text{Sun} \\ \text{Hills} \end{array} + \begin{array}{c} \text{Map} \\ \text{Roll} \end{array} - \begin{array}{c} \text{Snake} \\ \text{Bowl} \end{array} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #26

### Directions:

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Icon 1} + \text{Icon 2} + \text{Icon 3} = 57$$

$$\text{Icon 3} = 8 \times 8 - 15$$

$$\text{Icon 1} \div \text{Icon 2} = 9 - 8$$

$$\text{Icon 3} = \text{Icon 4} \times \text{Icon 4}$$

$$\text{Icon 4} + \text{Icon 3} - \text{Icon 1} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #27

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Unicorn} + \text{Wizard} + \text{Unicorn} = \text{Cauldron}$$

$$35 \div \text{Wolf} = 7$$

$$\text{Wizard} = \text{Unicorn}$$

$$\text{Wolf} \times \text{Wolf} = \text{Wizard}$$

$$\text{Unicorn} + \text{Wizard} + \text{Cauldron} - \text{Wolf} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #28

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$3 \times \text{Atom} + 0 = \text{Lightbulb}$$

$$\text{Atom} = \text{Triangle} \times 5$$

$$\text{Dashed Plus} = 45 \div 9$$

$$\text{Triangle} - \text{Dashed Plus} = 0$$

$$\text{Lightbulb} + \text{Dashed Plus} - \text{Atom} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #29

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$3 \times \text{skate} = \text{person}$$

$$\text{helmet} = \text{quad} - 0$$

$$\text{skate} = 66 \div \text{helmet}$$

$$\text{helmet} + \text{quad} + \text{helmet} = 18$$

$$\text{person} + \text{quad} - \text{skate} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #30

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$7 \times \text{Dove} + 8 = \text{Balloons}$$

$$\text{Balloons} = \text{Ring} \times \text{Ring}$$

$$9 = 54 \div \text{Ring}$$

$$\text{Dove} \times \text{Dove} + 1 = \text{Box}$$

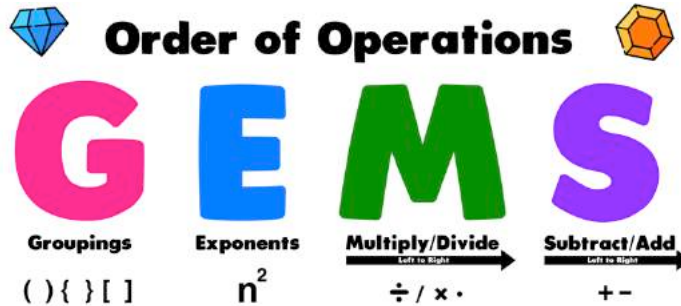
$$\text{Dove} \times \text{Ring} - \text{Box} = ?$$

? = \_\_\_\_\_

# HELPFUL HINT #4

Remember to follow the Order of Operations

(See page 130 to learn how to use the GEMS method for following the order of operations.)



## Examples


 = 8  
  = 4  
  = 2

### Example A

Perform multiplication/division before addition/subtraction.

$$\begin{array}{r}
 \text{Stapler} - \text{Lamp} \times \text{Tape} \\
 \text{Stapler} - 2 \times 4 \\
 8 - 8 = 0
 \end{array}$$

### Example B

Perform multiplication/division from left to right:

$$\begin{array}{r}
 \text{Stapler} \div \text{Tape} \times \text{Lamp} \\
 8 \div 4 \times \text{Lamp} \\
 2 \times 2 = 4
 \end{array}$$

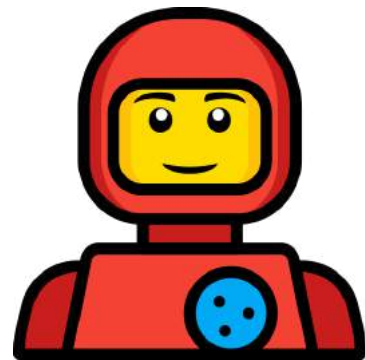


## Challenges 31-40

# Intermediate Level 2

**These puzzles incorporate the following:**

- Intermediate Mixed Operations
- Double and Triple-Digit Operations
- Multi-Step Problem Solving and Logic
- Intermediate Algebraic Thinking
- Advanced Substitution and Inverse Operations
- Advanced Order of Operations



Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #31

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Crying Blue Face} \div \text{Angry Red Face} = 1$$

$$\text{Green Face} \times \text{Crying Blue Face} \times \text{Green Face} = 64$$

$$\text{Surprised Blue Face} = \text{Angry Red Face} \times \text{Crying Blue Face} - \text{Angry Red Face}$$

$$\text{Crying Blue Face} = \text{Green Face}$$

$$\text{Green Face} + \text{Angry Red Face} + \text{Surprised Blue Face} \times \text{Crying Blue Face} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

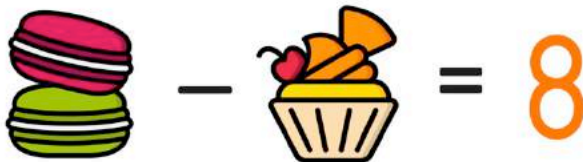
Date: \_\_\_\_\_

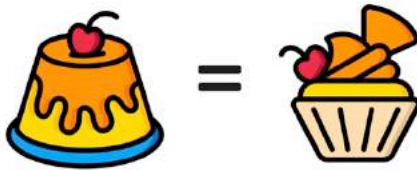
# MATH CHALLENGE #32

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.


$$\text{Cake} \times \text{Jelly} = \text{Cupcake}$$


$$\text{Macarons} - \text{Cupcake} = 8$$


$$\text{Jelly} = \text{Cupcake}$$


$$20 \times 5 = \text{Macarons} \times \text{Macarons}$$


$$\text{Macarons} - \text{Cake} \times \text{Cupcake} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #33

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{eggplant} \times \text{carrot} = 72$$

$$\text{carrot} = 12 - \text{carrot}$$

$$\text{spinach} - \text{eggplant} = 0$$

$$\text{spinach} \times \text{broccoli} \times \text{broccoli} = \text{spinach}$$

$$\text{eggplant} - \text{broccoli} \times \text{carrot} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #34

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Flag} \times \text{Flag} \times \text{Leaning Tower of Pisa} = \text{Map of Italy}$$

$$\text{Scooter} = 120 \div 5$$

$$\text{Leaning Tower of Pisa} \div \text{Flag} = 1$$

$$\text{Scooter} = 8 + \text{Flag} \times \text{Flag}$$

$$\text{Map of Italy} + \text{Leaning Tower of Pisa} \times \text{Scooter} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #35

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Propeller} \times \text{Pilot} = \text{Hot Air Balloon} \div \text{Propeller}$$

$$2 \times \text{Hot Air Balloon} = 7 \times 7 + 15$$

$$\text{Propeller} = \text{Propeller} \div \text{Airplane}$$

$$\text{Pilot} \times \text{Airplane} = 26 \div 13$$

$$\text{Hot Air Balloon} \div \text{Propeller} \times \text{Pilot} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #36

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Icon 1} + 3 + \text{Icon 2} = 99$$

$$13 \times \text{Icon 3} = \text{Icon 4}$$

$$\text{Icon 4} - \text{Icon 2} = 132 \div 4$$

$$68 \div \text{Icon 3} = 17$$

$$\text{Icon 1} - \text{Icon 2} \times \text{Icon 3} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #37

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Cat 1} + \text{Cat 1} + \text{Cat 1} = 267$$

$$\text{Cat 1} + \text{Cat 2} + \text{Cat 3} = 119$$

$$\text{Cat 2} = \text{Cat 3}$$

$$240 \div \text{Cat 2} = \text{Cat 4}$$

$$\text{Cat 1} + \text{Cat 4} \times \text{Cat 3} = ?$$

? = \_\_\_\_\_



Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #38

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Star} \times \text{Lightning Bolt} + \text{Potion} = 99$$

$$3 + \text{Star} \times \text{Lightning Bolt} = 52$$

$$350 \div \text{Potion} = 7$$

$$21 = \text{Gemstones} \times \text{Star}$$

$$\text{Star} + \text{Gemstones} \times \text{Potion} - \text{Lightning Bolt} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #39

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{3 pins} + \text{3 pins} - \text{1 ball} = \text{1 calculator}$$

$$81 \div \text{2 cart} + 1 = 4$$

$$\text{1 ball} \times 3 = \text{2 cart}$$

$$\text{3 pins} + \text{3 pins} = \text{2 cart} + 63$$

$$\text{2 cart} \div \text{1 ball} \times \text{3 pins} - \text{1 calculator} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

# MATH CHALLENGE #40

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Mouth} \times \text{Mouth} \times \text{Dentist} = 324$$

$$\text{Mouth} \div \text{Toothpaste} = \text{Toothpaste}$$

$$\text{Toothpaste} \times \text{Toothpaste} \times \text{Dentist} = 27$$

$$\text{Dentist} \div \text{Toothpaste} = 1$$

$$\text{Toothpaste} + \text{Dentist} \times \text{Mouth} - \text{Dentist} = ?$$

? = \_\_\_\_\_

# HELPFUL HINT #5

## Double-Symbols

A double-symbol is a grouping that can be interpreted as follows:

$$\text{🌮🌮} = \left( \text{🌮} + \text{🌮} \right)$$

or

$$\text{🌮🌮} = \left( \text{🌮} \times 2 \right)$$

Example

If  $\text{🎮🎮} - 5 = 13$ ,

then  $\text{🎮} = 9$

because  $\left( \text{🎮} \times 2 \right) - 5 = 13$   
 $18 - 5 = 13$

## Challenges 41-50

# Advanced Level 1

**These puzzles incorporate the following:**

- Advanced Mixed Operations
- Introduction to Grouping
- Properties of Zero
- Advanced Algebraic Thinking
- Advanced Substitution and Inverse Operations
- Advanced Order of Operations



Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #41

### Directions:

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Red Octagon} + 32 \div \text{Red Octagon} = 12$$

$$\text{Blue Bead Necklace} \times \text{Red Octagon} \times \text{Blue Bead Necklace} = 100$$

$$\text{Blue Bead Necklace} \times \text{Purple Jewelry Box} + \text{Green Diamond} = 42$$

$$\text{Green Diamond} \div \text{Purple Jewelry Box} = 1$$

$$\text{Red Octagon} + 2 \times \text{Green Diamond} \times \text{Blue Bead Necklace} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #42

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Coconut} + \text{Dragonfruit} + \text{Coconut} = 315$$

$$\text{Coconut} - \text{Dragonfruit} = 0 \times 19$$

$$\text{Cantaloupe} \times 2 + \text{Coconut} = 153$$

$$\text{Watermelon} + \text{Cantaloupe} + \text{Watermelon} = 100$$

$$2 \times \text{Coconut} + 2 \times \text{Cantaloupe} - \text{Watermelon} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #43

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$66 \div \text{Shield} - 2 = \text{Eagle}$$

$$\text{Eagle} \times \text{Eagle} + 19 = 100$$

$$\text{Statue} \times \text{Eagle} + \text{Statue} = 30$$

$$\text{Statue} \times \text{Hat} + \text{Shield} = 57$$

$$2 \times \text{Hat} + \text{Statue} \times \text{Eagle} = ?$$

? = \_\_\_\_\_



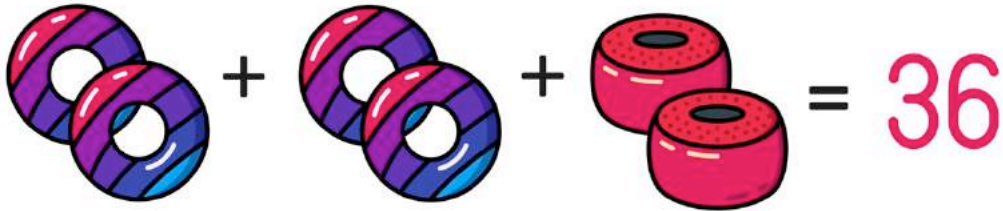
Name: \_\_\_\_\_

Date: \_\_\_\_\_

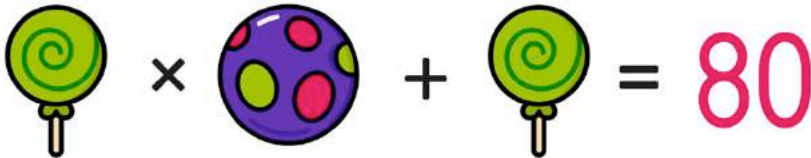
## MATH CHALLENGE #44

**Directions:**

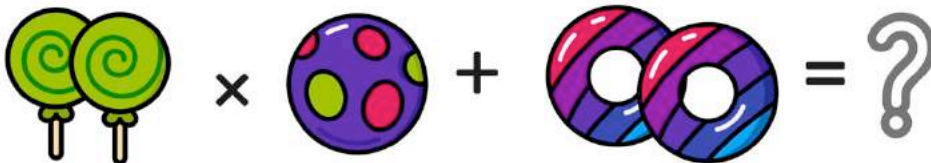
Use your math skills to find the value of each icon and the '?' in the puzzle below.


$$2 \times (\text{blue and purple striped donut}) + 2 \times (\text{blue and purple striped donut}) + 2 \times (\text{pink donut}) = 36$$


$$2 \times (\text{green spiral lollipop}) + (\text{pink donut}) \times (\text{pink donut}) = 56$$


$$(\text{green spiral lollipop}) \times (\text{purple polka-dot lollipop}) + (\text{green spiral lollipop}) = 80$$


$$(\text{blue and purple striped donut}) = (\text{pink donut})$$


$$2 \times (\text{green spiral lollipop}) \times (\text{purple polka-dot lollipop}) + 2 \times (\text{blue and purple striped donut}) = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #45

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$24 = \text{2 bears} + \text{2 bears} + \text{1 gorilla}$$

$$\text{1 gorilla} - \text{2 bears} = 0$$

$$40 = \text{2 aliens} \times \text{2 aliens} + \text{1 bear}$$

$$151 = \text{1 penguin} + \text{2 aliens} \times \text{2 aliens}$$

$$\text{2 penguins} + \text{1 gorilla} \times \text{2 aliens} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

# MATH CHALLENGE #46

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Icon 1} + \text{Icon 2} + \text{Icon 2} = 90$$

$$\text{Icon 1} + \text{Icon 3} \times \text{Icon 3} = 130$$

$$\text{Icon 3} \times \text{Icon 4} + \text{Icon 3} = 370$$

$$\text{Icon 2} = \text{Icon 1}$$

$$\text{Icon 4} + \text{Icon 1} \times \text{Icon 3} - \text{Icon 2} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #47

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Yellow T-shirt} + \text{Green Hoodie} + \text{Two Pink Dresses} = 29$$

$$\text{Yellow T-shirt} + \text{Purple Shorts} \times \text{Yellow T-shirt} = 144$$

$$\text{Yellow T-shirt} \times \text{Yellow T-shirt} - 16 = 128$$

$$\text{Two Purple Shorts} - 3 \times \text{Pink Dress} = 4$$

$$\text{Two Yellow T-shirts} \div \text{Pink Dress} \times \text{Green Hoodie} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #48

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Penguin} - \text{Cookie} + \text{Reindeer} = 16$$

$$2 \times \text{Polar Bear} + \text{Penguin} = 6 \times 6 - 9$$

$$\text{Penguin} \times \text{Polar Bear} = 81$$

$$\text{Polar Bear} \times \text{Cookie} \times \text{Penguin} = 0$$

$$2 \times \text{Polar Bear} \times \text{Reindeer} - \text{Cookie} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #49

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$1 + \text{Heart} \div \text{Horseshoes} = 7$$

$$\text{Horseshoes} + 5 + \text{Horseshoe} = 32$$

$$\text{Horseshoe} \times \text{Leprechaun} \times \text{Leprechaun} = 144$$

$$96 \div \text{Leprechaun} \times \text{Pots} = 144$$

$$\text{Heart} \times \text{Pot} - \text{Horseshoe} \times \text{Leprechauns} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #50

### Directions:

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Red Brain Icon} \times \text{Two Orange Hoodies} \div \text{Purple Head} = \text{Two Yellow Heads}$$

$$9 \times \text{Purple Head} - 8 = 217$$

$$\text{Two Orange Hoodies} \div 6 + \text{Orange Hoodie} = 20$$

$$\text{Purple Head} - \text{Orange Hoodie} \div \text{Red Brain Icon} = 22$$

$$\text{Orange Hoodie} \times \text{Purple Head} \div \text{Red Brain Icon} \times \text{Yellow Head} = ?$$

? = \_\_\_\_\_

# HELPFUL HINT #6

## Parenthesis and Square Roots

$$\text{🎃} = 25 \quad \text{👻} = 9 \quad \text{🧙} = 3$$

### EXAMPLE A

When following the order of operations, always perform groupings first!

$$\begin{aligned} & \left( \text{🎃} - \text{👻} \right) \times \text{🧙} \\ & \underbrace{25 - 9} \times \text{🧙} \\ & 16 \times 3 = 48 \end{aligned}$$

### EXAMPLE B

Perfect Squares and Square Roots Review:

$$\sqrt{49} = 7 \quad \text{because} \quad 7 \times 7 = 49$$

$$\sqrt{\text{🎃}} = 5 \quad \text{because} \quad 5 \times 5 = \text{🎃}$$

$$\sqrt{\text{👻}} = \text{🧙} \quad \text{because} \quad \text{🧙} \times \text{🧙} = \text{👻}$$

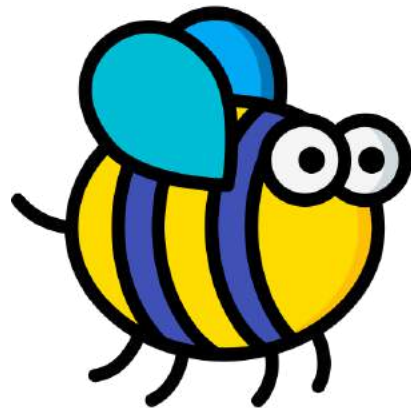


## Challenges 51-60

# Advanced Level 2

**These puzzles incorporate the following:**

- Advanced Mixed Operations
- Groupings and Parenthesis
- Square Roots and Perfect Squares
- Advanced Algebraic Thinking
- Advanced Substitution and Inverse Operations
- Advanced Order of Operations



Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #51

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Pirate} \times (\text{Treasure Chest} + \text{Treasure Chest}) = 110$$

$$50 - \text{Map} = \text{Map}$$

$$\sqrt{\text{Map}} = \text{Treasure Chest}$$

$$\text{Ship} \div \text{Pirate} \times 2 = 8$$

$$\text{Pirate} + \text{Map} \times \text{Treasure Chest} - \text{Ship} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #52

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Bee} + \text{Bee} + \text{Bee} = 48$$

$$(\text{Spider} - \text{Bee}) \div \text{Bee} = \text{Snail}$$

$$\sqrt{\text{Spider}} + \text{Bee} = 28$$

$$\text{Butterfly} \div \text{Snail} \times 3 = 42$$

$$(\text{Spider} + \text{Butterfly}) \div \text{Snail} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #53

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Fidget Spinner} - \text{Shoe} \times \text{Skateboard} = 0$$

$$(\text{Fidget Spinner} - \text{Shoe}) \times \text{Skateboard} = \text{Boombox}$$

$$\text{Fidget Spinner} \div 2 \div \text{Skateboard} = 1$$

$$\text{Shoe} \times \text{Shoe} = 625$$

$$(\text{Boombox} - \text{Fidget Spinner}) \div \text{Skateboard} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #54

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\sqrt{\text{Soap}} = \text{Lemon} + \text{Lemon}$$

$$(17 - \text{Lemon}) \times 3 = 39$$

$$\text{Soap} \div \text{Lemon} = \text{Candle}$$

$$\text{Candle} - \text{Perfume} = 0$$

$$(\text{Candle} + \text{Perfume}) \times \text{Lemon} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #55

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$120 \div (\text{pig} + \text{sheep}) = 5$$

$$216 = \text{bird} \times \text{bird} \times \text{bird}$$

$$\text{bird} = \sqrt{\text{star}}$$

$$\text{pig} = \text{sheep}$$

$$(\text{star} - \text{sheep}) \div \text{bird} \times \text{pig} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #56

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$99 \div (\text{Turntable} - \text{Piano}) = \text{Drum}$$

$$\sqrt{121} = \text{Drum} + 2$$

$$\sqrt{\text{Turntable}} = \text{Drum} - 5$$

$$41 = \text{Guitar} + \text{Piano} + \text{Guitar}$$

$$(\text{Guitar} - \text{Drum} + \text{Piano}) \times \text{Turntable} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #57

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\left( \text{Treasure Chest} \times \text{Treasure Chest} \right) + 7 = \text{Cart}$$

$$\sqrt{100} + \text{Cart} = \text{Horned Helmet}$$

$$10 \times 10 - 19 = \text{Horned Helmet}$$

$$\text{Horned Helmet} \div 9 \times \text{Treasure Chest} = \text{Castle}$$

$$\left( \text{Castle} + \text{Cart} \right) \times \text{Treasure Chest} = ?$$

? = \_\_\_\_\_



Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #58

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$196 \div \text{fishbowl} = \text{fishbowl}$$

$$\text{fishbowl} + \text{fishbowl} = \sqrt{225}$$

$$\text{frog} \div \text{fishbowl} = \text{fishbowl}$$

$$\text{cat} \times (98 \div \text{frog}) = 42$$

$$\text{fishbowl} \times \text{cat} - \text{frog} + \text{fishbowl} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #59

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$169 \div \text{Moon} = \text{Bucket}$$

$$\sqrt{\text{Sun}} + \text{Sun} = 2$$

$$\text{Moon} \div \text{Bucket} = \text{Sun}$$

$$\text{Bucket} \times (\text{Cloud} \div 31) = 26$$

$$\text{Moon} \times \text{Cloud} - \text{Bucket} \times \text{Sun} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

# MATH CHALLENGE #60

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Hourglass} \times \text{Water Bottle} \div \text{Racquet} = \text{Door}$$

$$\text{Water Bottle} - \text{Racquet} = 0$$

$$102 \div \text{Water Bottle} = 6$$

$$\text{Hourglass} \times (68 \div \text{Water Bottle}) = 0$$

$$\text{Hourglass} + (\text{Water Bottle} + \text{Racquet}) \times \text{Door} = ?$$

? = \_\_\_\_\_

# HELPFUL HINT #7

## Negative Numbers

$$\text{lemon} = 22 \quad \text{orange} = -5 \quad \text{cherries} = -10$$

### Examples:

Adding a negative is the same as subtracting.

$$\text{lemon} + \text{cherries} \Rightarrow 22 + -10 \Rightarrow 22 - 10 = 12$$

Subtracting a negative is the same as adding.

$$\text{orange} - \text{cherries} \Rightarrow -5 - -10 \Rightarrow -5 + 10 = 5$$

double negative                      ↑

A negative times a positive is negative.

$$\text{lemon} \times \text{orange} \Rightarrow 22 \times -5 = -110$$

A negative times a negative is positive.

$$\text{orange} \times \text{cherries} \Rightarrow -5 \times -10 = 50$$

## Challenges 61-70

# Negative Numbers

**These puzzles incorporate the following:**

- Advanced Mixed Operations
- Operations with Negative Numbers
- Properties of Zero
- Advanced Algebraic Thinking
- Advanced Substitution and Inverse Operations
- Advanced Order of Operations



Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #61

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$100 + \text{Peace T-shirt} = 97$$

$$\text{Peace T-shirt} \times \text{Earth with Heart} = -27$$

$$\text{Earth with Heart} - \text{Hand with Plant} = -20$$

$$\text{Two People with Hearts} \div \text{Hand with Plant} = -1$$

$$\text{Peace T-shirt} + \text{Two People with Hearts} + \text{Earth with Heart} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #62

### Directions:

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{City Icon} + \text{City Icon} + \text{Maple Syrup Icon} = -24$$

$$\text{City Icon} = \text{Maple Syrup Icon}$$

$$\text{Flag Icon} \times \text{Hockey Icon} = -25$$

$$\text{City Icon} - \text{Hockey Icon} = -3$$

$$\text{City Icon} + \text{Maple Syrup Icon} - \text{Flag Icon} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #63

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Potted Plant} \times \text{Potted Plant} \times \text{Cactus} = -64$$

$$379 \div \text{Cactus} = -379$$

$$-96 \div \text{Potted Plant} = \text{Basket Plant}$$

$$\text{Basket Plant} - 27 = \text{Potted Plant}$$

$$\text{Potted Plant} \times \text{Potted Plant} - \text{Cactus} = ?$$

? = \_\_\_\_\_



Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #64

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$3 = \text{lightbulb} + -16 + \text{steak}$$

$$-45 \div \text{steak} = -3$$

$$\text{lightbulb} + \text{skewer} = -56$$

$$\text{skewer} + \text{skewer} - 5 = \text{campfire}$$

$$\text{campfire} + \text{lightbulb} - \text{steak} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #65

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{tissue box} \times \text{mask} = 99$$

$$\text{tissue box} + \text{mask} = -36$$

$$\text{tissue box} - \text{hand washing} - 1 = -51$$

$$\text{mask} \times \text{hand washing} \times -1 = \text{germs}$$

$$\text{germs} \div \text{mask} + \text{tissue box} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

# MATH CHALLENGE #66

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$9 + \text{Porthole} = \text{Ship}$$

$$\text{Ship's Wheel} = \text{Dolphin} \times -3$$

$$\text{Dolphin} + \text{Porthole} = \text{Ship's Wheel} \times -1$$

$$3 = \text{Dolphin} + 10$$

$$\text{Dolphin} \times \text{Ship} + \text{Ship's Wheel} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #67

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Feather} - \text{Leather} = \text{Leaves}$$

$$-9 + \text{Flower} = 54 \div 18$$

$$\text{Flower} \div \text{Leaves} = 1$$

$$\text{Feather} \div \text{Leather} = -1$$

$$\text{Feather} \times \text{Leather} - \text{Flowers} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #68

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Heart} \div \text{Smoothie} = \text{Medicine} + \text{Medicine}$$

$$-77 \div \text{Medicine} = -77$$

$$\text{Heart} \times -5 = 500$$

$$\text{Smoothie} + 69 = \text{Dumbbell}$$

$$\left( \text{Heart} + \text{Smoothie} - \text{Medicine} \right) \div \text{Dumbbell} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #69

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Football} + \text{Football} = \text{Helmet}$$

$$-3 \left( \text{Helmet} + 1 \right) = 123$$

$$\text{Whiteboard} + \text{Jersey} - \text{Football} = 141$$

$$\text{Jersey} - \text{Whiteboard} = 0$$

$$\text{Whiteboard} - \text{Football} - \text{Two Helmets} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #70

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Toothbrushes} \times \text{Toilet} \times 4 = \text{Bathtub}$$

$$-42 \times -4 = \text{Bathtub}$$

$$\text{Bathtub} \div \text{Toothbrushes} = -28$$

$$\text{Robe} = 36 + \text{Toilet} - 5$$

$$2 \times \text{Toilets} \div \text{Robe} = ?$$

? = \_\_\_\_\_

# HELPFUL HINT #8

Place Value and Decimals

Place Value Chart for Decimals

T H O U S A N D S	H U N D R E D S	T E N S	O N E S	D E C I M A L	T E N T H S	H U N D R E D T H S	T H O U S A N D T H S
		3	2	•	0	4	

$$32.04 + 8.21 \Rightarrow \begin{array}{r} 32.04 \\ + 8.21 \\ \hline = 40.25 \end{array}$$

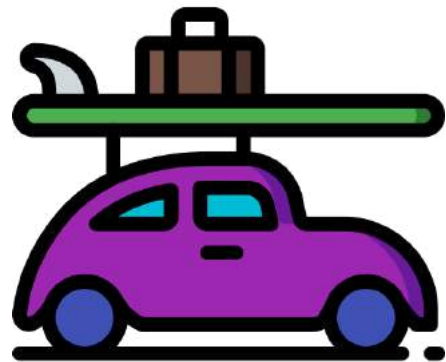


## Challenges 71-80

# Fractions & Decimals

**These puzzles incorporate the following:**

- Advanced Mixed Operations
- Operations with Decimals
- Operations with Fractions
- Advanced Algebraic Thinking
- Advanced Substitution and Inverse Operations
- Equivalent Fractions and Reduced Fractions



Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #71

### Directions:

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{fox} + \text{fox} = 1$$

$$\text{fox} + \text{tree} = \text{umbrella}$$

$$8 = \text{tree} + 8$$

$$\text{fox} + \text{umbrella} = \text{acorn}$$

$$\text{fox} + \text{umbrella} + \text{tree} + \text{acorn} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #72

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Beach Ball} = \text{Car with Suitcase} + \text{Car with Suitcase} + \text{Car with Suitcase} + \text{Car with Suitcase}$$

$$1 = \text{Two Palm Trees} + \text{Two Palm Trees}$$

$$\text{Beach Ball} - \text{Two Palm Trees} = \frac{1}{2}$$

$$\text{Two Palm Trees} = \text{Basket} + \text{Basket}$$

$$\text{Two Palm Trees} + \text{Basket} + \text{Car with Suitcase} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #73

### Directions:

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Microscope} + \text{Microscope} + \text{Microscope} + \text{Microscope} = 1$$

$$1 - \text{Microscope} = \text{DNA and Magnifying Glass}$$

$$\text{DNA and Magnifying Glass} + \text{DNA and Magnifying Glass} + \text{Microscope} = \text{Test Tubes}$$

$$\text{Building} + \text{Microscope} = \frac{3}{4}$$

$$\text{Building} + \text{Test Tubes} + \text{DNA and Magnifying Glass} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #74

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Fish} \times 8 \times \text{Eel} = \text{Octopus}$$

$$\text{Eel} \times \text{Eel} = \frac{1}{4}$$

$$\text{Octopus} = 50 \div \text{Eel}$$

$$\text{Octopus} + \text{Fish} = \text{Umbrella}$$

$$\text{Umbrella} - \text{Eel} \times \text{Octopus} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #75

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Icon 1} + \text{Icon 2} + \text{Icon 3} = 1$$

$$\text{Icon 2} \times 12 = \text{Icon 4}$$

$$\text{Icon 1} + \frac{2}{8} = \frac{7}{8}$$

$$\text{Icon 4} \div \frac{1}{3} = 9$$

$$\text{Icon 3} + \text{Icon 2} + \text{Icon 4} + \text{Icon 1} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

# MATH CHALLENGE #76

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Strawberry} + \text{Strawberry} + \text{Strawberry} = 2.7$$

$$\text{Strawberry} + \text{Lemon} + \text{Banana} = 3.9$$

$$\text{Watermelon} + \text{Banana} + \text{Watermelon} = 2.3$$

$$\text{Lemon} = \text{Banana}$$

$$\text{Lemon} + \text{Watermelon} + \text{Banana} - \text{Strawberry} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #77

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\begin{array}{c} + \\ \text{Stack of 3 towels} \\ * \end{array} + \begin{array}{c} \text{Iron} \\ \text{Steam} \end{array} + \begin{array}{c} \text{Washing Machine} \end{array} = \begin{array}{c} * \\ \text{Bottle of detergent} \\ + \\ \text{Detergent cup} \end{array}$$

$$1 - \begin{array}{c} + \\ \text{Stack of 3 towels} \\ * \end{array} = 0.65$$

$$4 \times \begin{array}{c} + \\ \text{Stack of 3 towels} \\ * \end{array} + 2 = \begin{array}{c} \text{Iron} \\ \text{Steam} \end{array}$$

$$\begin{array}{c} \text{Iron} \\ \text{Steam} \end{array} + \begin{array}{c} \text{Iron} \\ \text{Steam} \end{array} + \begin{array}{c} \text{Washing Machine} \end{array} = 7.55$$

$$\begin{array}{c} * \\ \text{Bottle of detergent} \\ + \\ \text{Detergent cup} \end{array} + \begin{array}{c} \text{Iron} \\ \text{Steam} \end{array} - \begin{array}{c} + \\ \text{Stack of 3 towels} \\ * \end{array} = ?$$

? = \_\_\_\_\_



Name: \_\_\_\_\_

Date: \_\_\_\_\_

# MATH CHALLENGE #78

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Mountain} + \text{Teapot} + \text{Sushi} = 1.25$$

$$0.5 = 1 - \text{Map}$$

$$0.15 = \text{Sushi} - \text{Map}$$

$$\text{Mountain} \div \text{Map} = 1$$

$$\text{Mountain} + \text{Map} - \text{Sushi} - \text{Teapot} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #79

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Wheel} + \text{Wheel} + \text{Mechanic} = \text{Garage}$$

$$\text{Garage} = \text{Battery}$$

$$3.91 = \text{Mechanic} + 1.31$$

$$\text{Wheel} + 0.88 = 1.08$$

$$\text{Battery} - \text{Mechanic} - \text{Wheel} = ?$$

? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #80

**Directions:**

Use your math skills to find the value of each icon and the '?' in the puzzle below.

$$\text{Grapes} + 0.97 + \text{Olives} = 5$$

$$\text{Cheese} \div \text{Olives} = 1.25$$

$$\text{Cheese} - \text{Olives} + 3 = 4$$

$$\text{Grapes} \times 8 = 0.24$$

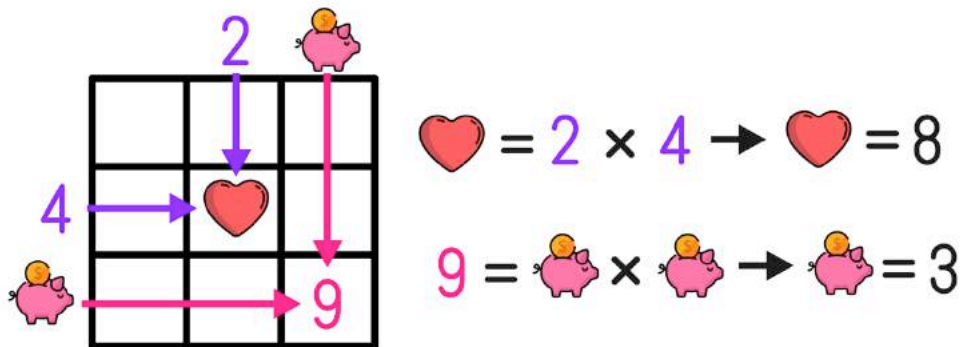
$$\text{Cheese} - \text{Grapes} \times \text{Olives} = ?$$

? = \_\_\_\_\_

# HELPFUL HINT #9

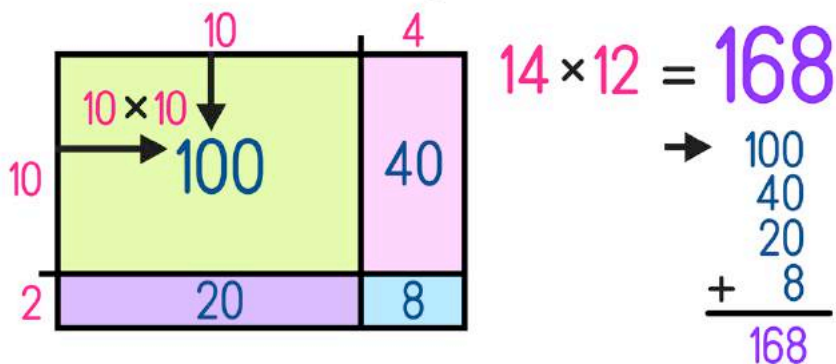
## Multiplication Tables

Multiplication tables work like a Bingo Board where each box represents the product of its corresponding column and row.



## Area Models

Area Models work like a Bingo Board where each box represents the product of its corresponding column and row and the sum of all four inner boxes represents the total.



## Challenges 81-96

# Multiplication Tables and Area Models

**These puzzles incorporate the following:**

- Applications of Multiplication and Division
- Inverse Operations
- Geometric Modeling
- Intermediate Algebraic Problem-Solving
- Area, Arrays, and Grids










Name: \_\_\_\_\_






Date: \_\_\_\_\_

## MATH CHALLENGE #81

**Directions:**

Use your math skills to find the value of each symbol in the multiplication table.

	2		6
	2		6
4			24
6		18	

	<input type="text"/>		<input type="text"/>
	<input type="text"/>		<input type="text"/>
	<input type="text"/>		











Name: \_\_\_\_\_






Date: \_\_\_\_\_

# MATH CHALLENGE #82

**Directions:**

Use your math skills to find the value of each symbol in the multiplication table.

		2	
	1		
	3		9
		12	

	<input type="text"/>		<input type="text"/>
	<input type="text"/>		<input type="text"/>
	<input type="text"/>		










Name: \_\_\_\_\_







Date: \_\_\_\_\_

## MATH CHALLENGE #83

**Directions:**

Use your math skills to find the value of each symbol in the multiplication table.

	8		
		0	
	8		11
	16	18	

	<input type="text"/>		<input type="text"/>
	<input type="text"/>		<input type="text"/>
	<input type="text"/>		<input type="text"/>









Name: \_\_\_\_\_






Date: \_\_\_\_\_

# MATH CHALLENGE #84

**Directions:**

Use your math skills to find the value of each symbol in the multiplication table.

	2		
		15	18
4		20	
	12	30	36

	<input type="text"/>		<input type="text"/>
	<input type="text"/>		<input type="text"/>
	<input type="text"/>		











Name: \_\_\_\_\_









Date: \_\_\_\_\_

## MATH CHALLENGE #85

**Directions:**

Use your math skills to find the value of each symbol in the multiplication table.

			3
2			
		25	
	48	30	

	<input type="text"/>		<input type="text"/>		<input type="text"/>
	<input type="text"/>		<input type="text"/>		<input type="text"/>
	<input type="text"/>		<input type="text"/>		











Name: \_\_\_\_\_









Date: \_\_\_\_\_

# MATH CHALLENGE #86

**Directions:**

Use your math skills to find the value of each symbol in the multiplication table.

			
	35		
	49		
	63	81	108

	<input type="text"/>		<input type="text"/>		<input type="text"/>
	<input type="text"/>		<input type="text"/>		<input type="text"/>
	<input type="text"/>		<input type="text"/>		











Name: \_\_\_\_\_










Date: \_\_\_\_\_

# MATH CHALLENGE #87

**Directions:**

Use your math skills to find the value of each symbol in the multiplication table.

		7	
8			
	8		24
			144

	<input type="text"/>		<input type="text"/>		<input type="text"/>
	<input type="text"/>		<input type="text"/>		<input type="text"/>
	<input type="text"/>		<input type="text"/>		<input type="text"/>











Name: \_\_\_\_\_







Date: \_\_\_\_\_

# MATH CHALLENGE #88

**Directions:**

Use your math skills to find the value of each symbol in the multiplication table.

	4		
			
			128
10	40	80	

	<input type="text"/>		<input type="text"/>
	<input type="text"/>		<input type="text"/>
	<input type="text"/>		<input type="text"/>

Name: \_\_\_\_\_

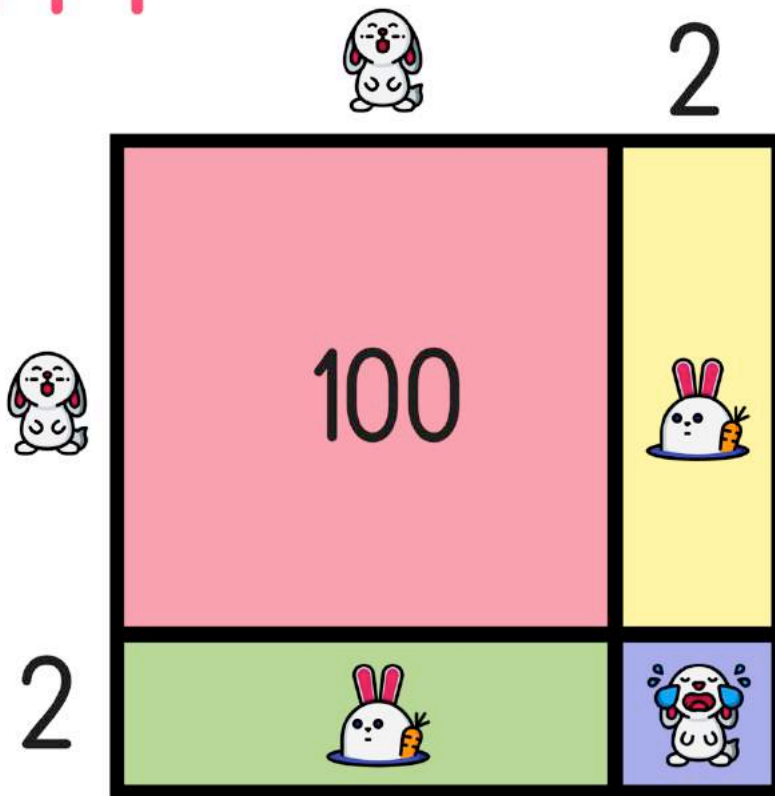
Date: \_\_\_\_\_

## MATH CHALLENGE #89

**Directions:**

Find the value of each symbol in the area model below so that the entire box represents the following value:

144



Name: \_\_\_\_\_

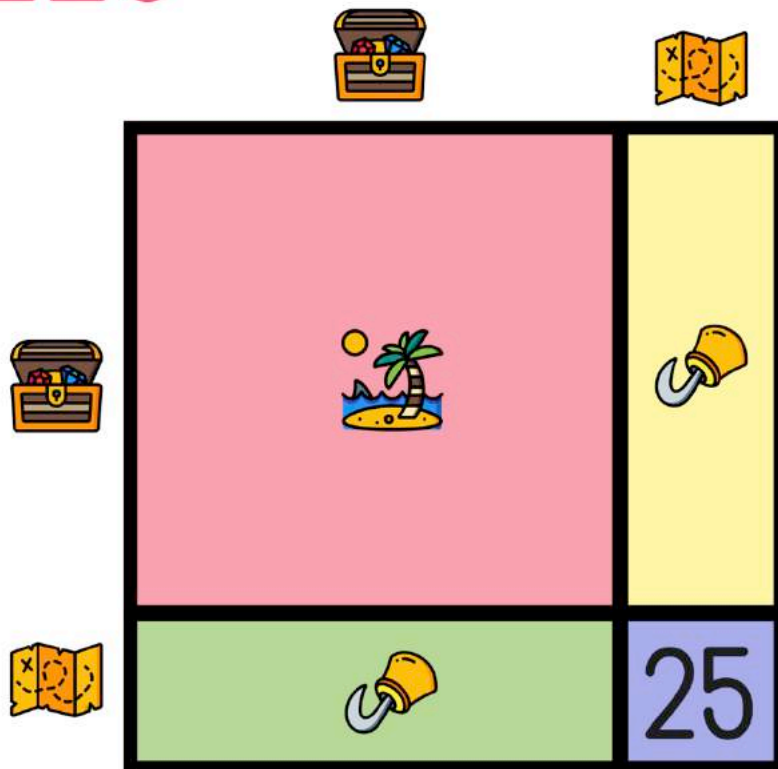
Date: \_\_\_\_\_





# MATH CHALLENGE #90

**Directions:**

Find the value of each symbol in the area model below so that the entire box represents the following value:

225



			
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Name: \_\_\_\_\_

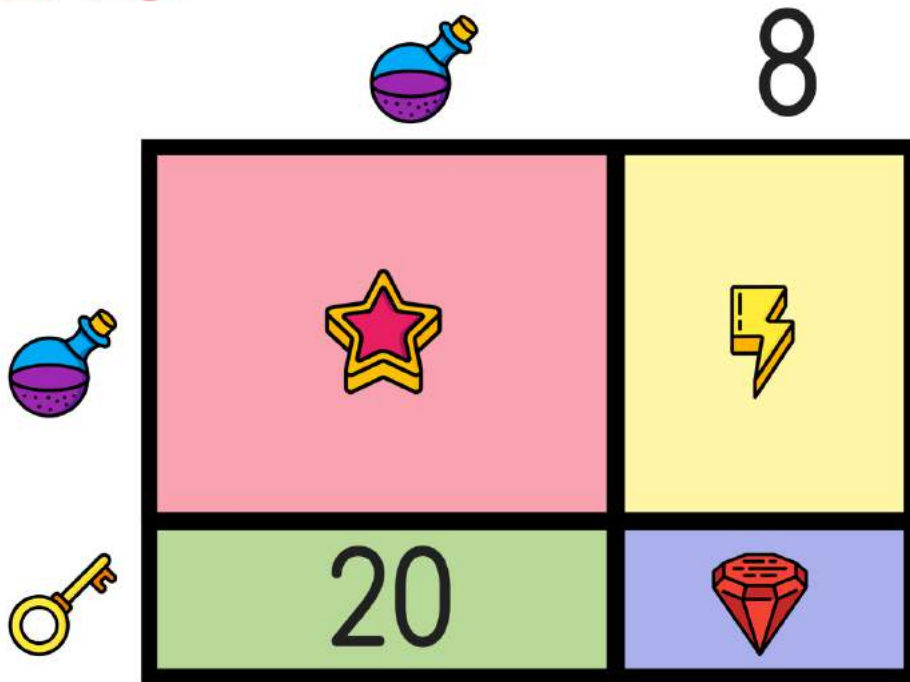
Date: \_\_\_\_\_






## MATH CHALLENGE #91

**Directions:**

Find the value of each symbol in the area model below so that the entire box represents the following value:

216



				
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>



Name: \_\_\_\_\_

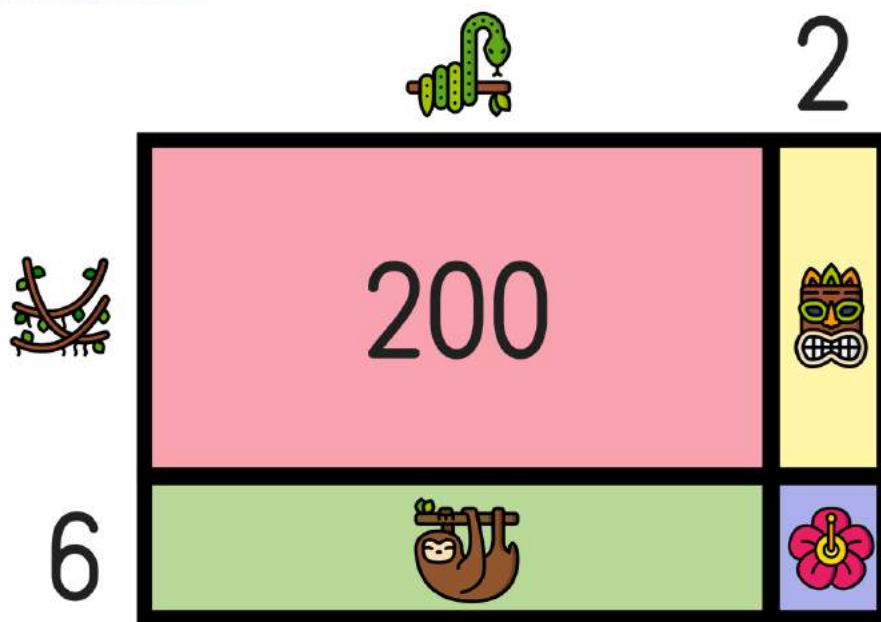
Date: \_\_\_\_\_






# MATH CHALLENGE #92

**Directions:**

Find the value of each symbol in the area model below so that the entire box represents the following value:

352



				
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Name: \_\_\_\_\_

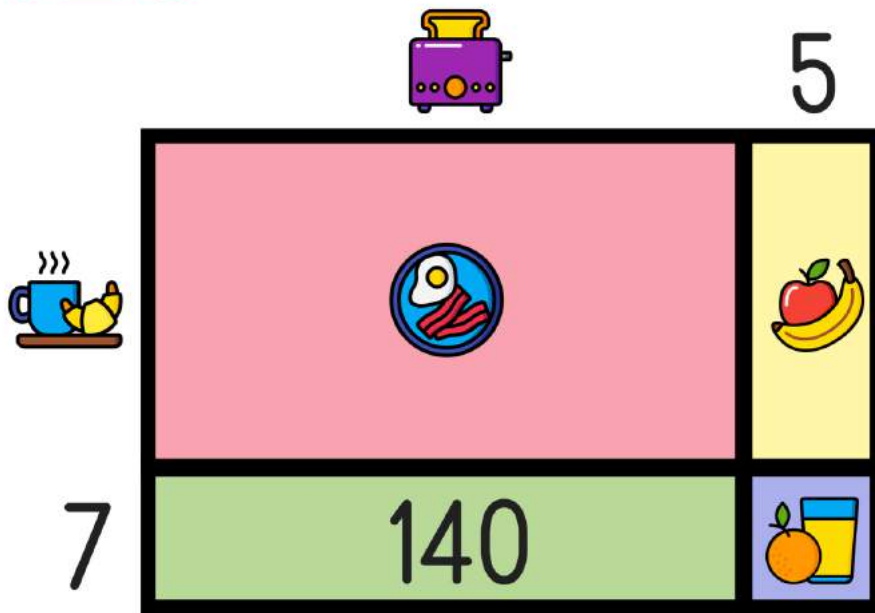
Date: \_\_\_\_\_






## MATH CHALLENGE #93

**Directions:**

Find the value of each symbol in the area model below so that the entire box represents the following value:

425



				
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Name: \_\_\_\_\_

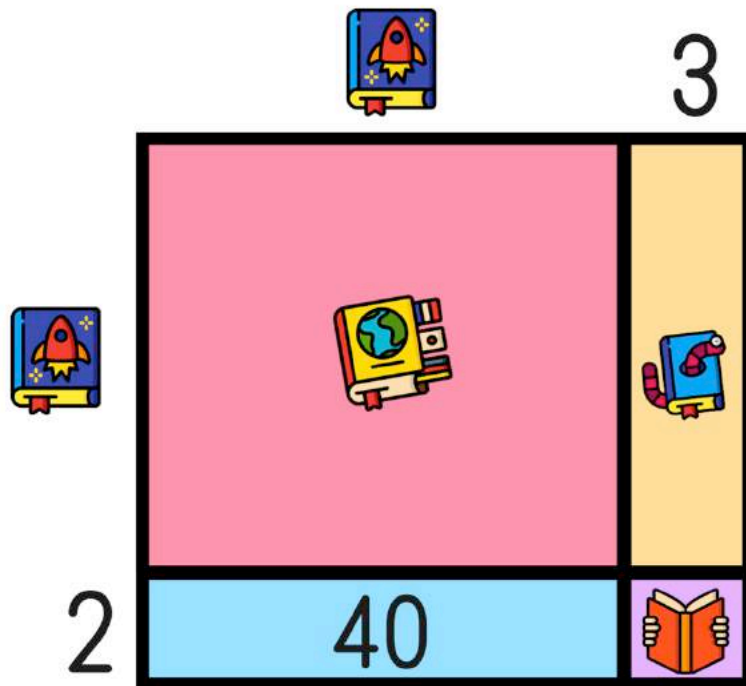
Date: \_\_\_\_\_





# MATH CHALLENGE #94

**Directions:**

Find the value of each symbol in the area model below so that the entire box represents the following value:

506



			
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Name: \_\_\_\_\_

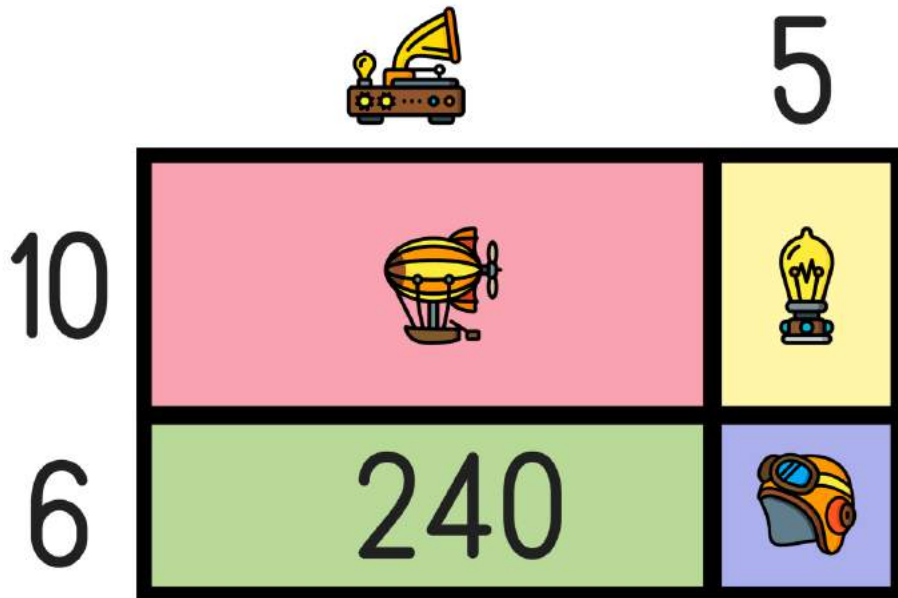
Date: \_\_\_\_\_





## MATH CHALLENGE #95

**Directions:**

Find the value of each symbol in the area model below so that the entire box represents the following value:

720



			
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Name: \_\_\_\_\_

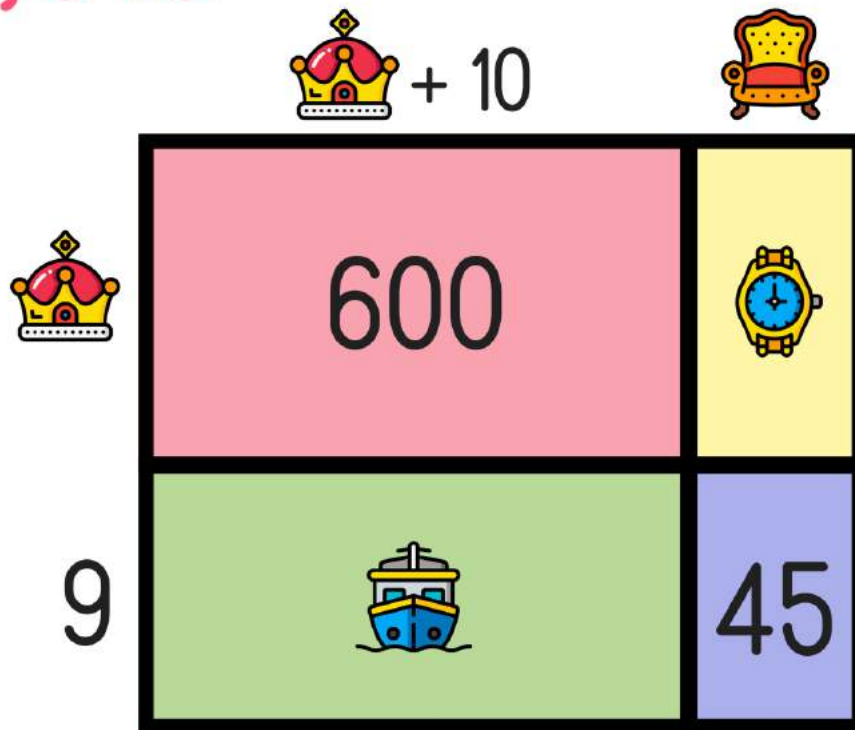
Date: \_\_\_\_\_





# MATH CHALLENGE #96

**Directions:**

Find the value of each symbol in the area model below so that the entire box represents the following value:

1,015



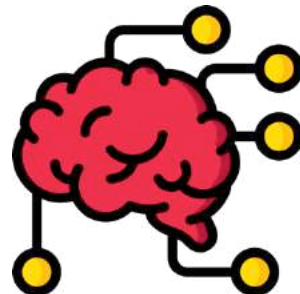
   

# HELPFUL HINT #10

## It's okay to make mistakes!

Here are some tips to help you persevere through challenging problems:

- Read each puzzle carefully and think about the problem for a while before doing anything.
- Utilize strategies such as visualizing, drawing diagrams, and trial-and-error when you don't know where to start.
- Don't get discouraged! When you are struggling and making mistakes, you are in the process of learning. This is called having a growth mindset!
- w Whenever you find a solution, ask yourself "does my answer make sense?"
- If you are stuck on a problem, close the book, take a short break, and do something else like taking a short walk. You'll be surprised by how the problem will become more manageable when you return.
- Have fun!

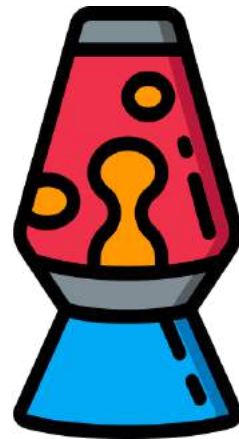


## Challenges 97-101

# Bonus Puzzles

**These puzzles incorporate the following:**

- Advanced Mathematical Problem-Solving
- Pattern Recognition
- Area Models
- Weights and Conversions
- Applied Mathematics



Name: \_\_\_\_\_

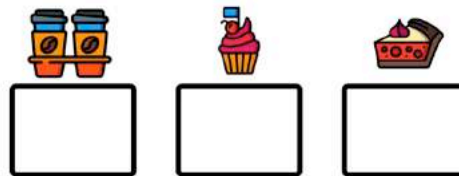
Date: \_\_\_\_\_

# MATH CHALLENGE #97

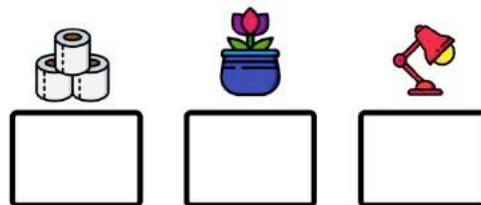
## Directions:

Find the value of each item on the scales below:

### Problem A



### Problem B





Name: \_\_\_\_\_






Date: \_\_\_\_\_

# MATH CHALLENGE #98

**Directions:**

If the diagram below represents 300, find the value of each region:



				
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Name: \_\_\_\_\_

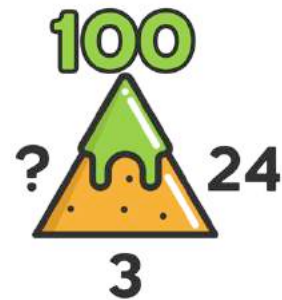
Date: \_\_\_\_\_

## MATH CHALLENGE #99

### Directions:

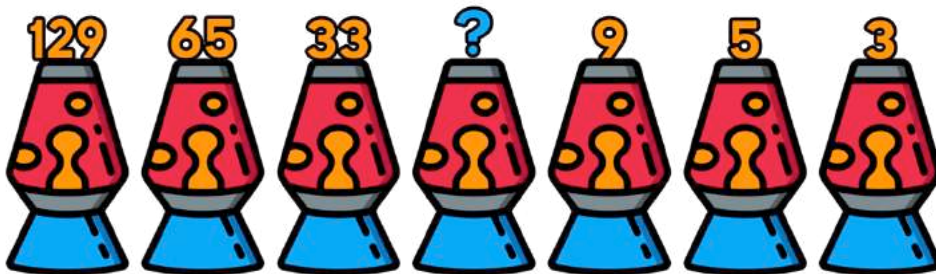
Figure out the pattern and find the value of the '?' in each of the following:

#### Problem A



? = \_\_\_\_\_

#### Problem B



? = \_\_\_\_\_

Name: \_\_\_\_\_

Date: \_\_\_\_\_

# MATH CHALLENGE #100

**Directions:**

How many total squares are in the diagram below?

(Hint: some squares are overlapping)



There are \_\_\_\_\_ squares in total.

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## MATH CHALLENGE #101

**Directions:**

In the diagram below, there are several monsters blocking five of the six numbers in the bottom row. Identify the pattern of the diagram and determine what numbers are being covered up.

(Hint: numbers can appear more than once)



The hidden numbers are \_\_\_\_\_ .

## ANSWER KEY

<b>01</b> Orange=5 Cherries=4 Lemon=10 ?=19	<b>02</b> Soda Cap=8 Bowling=6 TV=9 ?=23	<b>03</b> Campfire=12 Tent=11 Chair=2 ?=3	<b>04</b> Cyclops Monster=9 Franken Monster=18 Happy Monster=6 ?=12
<b>05</b> Jam=16 Toothbrush=6 Iron=7 ?=9	<b>06</b> Sabertooth=7 Hut=16 Fossil=23 ?=46	<b>07</b> Snail=14 Sun=12 Seedling=4 ?=6	<b>08</b> Batman=10 Superman=11 Spiderman=21 ?=42
<b>09</b> Chocolate Bar=26 Gum Drops=13 Lollipop=8 ?=31	<b>10</b> Panda=12 Lamb=8 Pillow=16 ?=36	<b>11</b> Video Game=9 Keyboard=9 Sneaker=36 Car=18 ?=45	<b>12</b> Ice Cream Cone=11 Watermelon Pop=11 Ice Cream Bar=8 Ice Cream Sandwich=5 ?=35
<b>13</b> Camera=12 Paint=12 Canvas=8 Printer=4 ?=24	<b>14</b> Fox=8 Igloo=8 Penguin=20 Thermometer=14 ?=2	<b>15</b> Orange Juice=6 Eggs & Bacon=9 Coffee=27 Toaster=4 ?=37	<b>16</b> Antennas (Arms-Down)=12 Antennas (Arms-Up)=7 Floating Robot=12 Robot w/ Legs=24 ?=55
<b>17</b> Poodle w/ Bow=15 Terrier=6 Husky=8 Dog w/ Bone=4 ?=17	<b>18</b> Spray Bottle=4 Barber Shop=14 Scissors=7 Hair Gel=11 ?=14	<b>19</b> Jersey=8 Field=8 Gloves=5 Ball=1 ?=22	<b>20</b> Check=12 Calculator & Book=14 Piggy Bank=14 Abacus=7 ?=19
<b>21</b> Coffee Cup=10 Milk=9 Coffee Machine=5 Coffee Beans=12 ?=69	<b>22</b> Pony Tail=9 Hoodie=9 Glasses=19 Spikey Hair=2 ?=37	<b>23</b> Arcade Game=6 Air Hockey=6 Basketball=12 Steering Wheel=24 ?=48	<b>24</b> Clown Fish=8 Diver=9 Fins=7 Coral=7 ?=47

<b>25</b> Desert=8 Snake=6 Genie Lamp=7 Scroll=14 ?=16	<b>26</b> Guy w/Flag=49 Standing (no flag)=7 Planet Fishing=4 Floating=4 ?=52	<b>27</b> Unicorn=25 Zeus=25 Cauldron=75 Wolf=5 ?=120	<b>28</b> Magnetism=5 Molecules=5 Atom=25 Plasma Ball=75 ?=55
<b>29</b> Roller Blade=11 Wing Suit=33 Helmet=6 RV=6 ?=28	<b>30</b> Dove=4 Balloons=36 Ring=6 Chocolates=17 ?=7	<b>31</b> Vomiting=4 Crying=4 Angry=4 Surprised=12 ?=56	<b>32</b> Strawberry Cake=1 Flan=2 Cupcake=2 Macaroons=10 ?=8
<b>33</b> Ginger=6 Eggplant=12 Lettuce=12 Bok Choy=1 ?=6	<b>34</b> Flag=4 Tower of Pisa=4 Italy=64 Vespa=24 ?=160	<b>35</b> Plane=1 Pilot Mask=2 Balloon=32 Propeller=4 ?=16	<b>36</b> Necklace=77 Helmet=19 Skeleton=4 Pony Tail=52 ?=1
<b>37</b> Tail Up=89 Cat in Box=15 Cat in Love=15 Cat w/ Bow=16 ?=329	<b>38</b> Potion=50 Bolt=7 Star=7 Jewels=3 ?=150	<b>39</b> Ball Rack=27 Bowling Ball=9 Bowling Pins=45 Scorecard=81 ?=54	<b>40</b> Mouth=9 Tooth Fairy=4 Toothpaste=3 Dentist Chair=3 ?=36
<b>41</b> 8-Sided Gem=4 Necklace=5 Earrings=7 Diamond=7 ?=74	<b>42</b> Coconut=105 Dragon Fruit=105 Star Fruit=24 Watermelon=38 ?=220	<b>43</b> Eagle=9 Star=6 Lady Liberty=3 Hat=17 ?=61	<b>44</b> Ring Candy=6 Lollipop=8 Gum Drop=6 Ball Candy=9 ?=156
<b>45</b> Teddy Bear=4 Gorilla=8 Penguin=7 Monster=6 ?=110	<b>46</b> Boy (Flat Top)=30 Boy (Messy Hair)=15 Girl (Pony Tail)=10 Girl (Bangs)=18 ?=321	<b>47</b> T-Shirt=12 Hoodie=5 Dress=6 Swim Trunks=11 ?=20	<b>48</b> Penguin=9 Polar Bear=9 Gingerbread Man=0 Reindeer=7 ?=126

49 Heart=108 Horseshoe=9 Girl=4 Pot of Gold=3 ?=252	50 Mouth Open Alien=25 Mouth Closed Alien=15 Cyclops Alien=3 Floating Brain=5 ?=225	51 Pirate Ship=44 Kraken=11 Treasure=5 Map=25 ?=92	52 Bee=16 Spider=144 Snail=8 Butterfly=112 ?=32
53 Spinner=50 Sneaker=25 Skateboard=2 Boom Box=50 ?=0	54 Soap=64 Lemon=4 Candles=16 Lotions=16 ?=128	55 Pig=12 Mouse=12 Swan=6 Star=36 ?=48	56 Record=16 Drum=9 Keyboard=5 Guitar=18 ?=224
57 Shield=8 Catapult=71 Helmet=81 Castle=72 ?=1,144	58 Hamster=14 Fish Bowl=1 Iguana=14 Cat=6 ?=71	59 Moon=13 Tornado=13 Sun=1 Cloud=62 ?=793	60 Ball Can=0 Water Bottle=17 Racket=17 Court=0 ?=0
61 T-Shirt=-3 Earth=9 Seedling=29 Friends=-29 ?=-23	62 City=-8 Syrup=-8 Flag=5 Hockey=-5 ?=-21	63 Squiggle Planter=8 Cactus Mug=-1 Hanging Plant=-12 Spikey Plant=-39 ?=-311	64 Match=4 Steak=15 Grill=-125 Hot Dog=-60 ?=-136
65 Tissues=-33 Mask=-3 Handwash=17 Bacteria=51 ?=-50	66 Window=-14 Ship=-5 Wheel=21 Dolphin=-7 ?=56	67 Feather=6 Leather=-6 Leaves=12 Cotton=12 ?=-60	68 Heart=-100 Juice=-50 Vitamins=1 Weightlifting=19 ?=-8
69 Football=-21 Helmet=-42 Play Chart=60 Padding=60 ?=165	70 Cup=-6 Toilet=-7 Bath Tub=168 Robe=24 ?=7	71 Fox=1/2 Tree=0 Umbrella=1/2 Pinecone=1 ?=2	72 Palm Trees=1/2 Beach Bag=1/4 Beach Ball=1 Beatle=1/4 ?=1

73 Microscope=1/4 DNA=3/4 Beakers=2 Observatory=1/2 ?=3¼ or 3.25	74 Fish=25 Eel=1/2 Octopus=100 Sting Ray=125 ?=75	75 Cloud=1/8 Printer=1/4 or 2/8 Screen=3 Desk=5/8 ?=4	76 Strawberry=0.9 Lemon=1.5 Banana=1.5 Watermelon=0.4 ?=2.5
77 Towels=0.35 Iron=3.4 Washer=0.75 Detergent=4.5 ?=7.55	78 Mt. Fuji=0.5 Tea Kettle=0.1 Sushi=0.65 Japan=0.5 ?=0.25	79 Flat Tire=0.2 Mechanic=2.6 Garage=3 Battery=3 ?=0.2	80 Cheese=5 Olives=4 Grapes=0.03 ?=4.88
81 Orange=3 Cherries=1 Coconut=36 Blueberries=8 Watermelon=12	82 Roller Blade=1 Disco Ball=6 Record=2 Hand=18 Van=3	83 Shell Fossil=9 Triceratops=2 Volcano=1 Plant=22 T-Rex=11 Mosquito=0	84 Chef Hat=5 Cube Cake=6 Cupcake=3 Strawberry Cake=24 Box of Cupcakes=8
85 Witch=8 Sunglasses=5 Construction=6 Cowboy=10 Mowhawk=16 Hair Bun=40 Pony Tail=18 Mummy=15	86 Pinwheel=7 Elephant=9 Pig=12 Star=63 Frog=45 Dog=60 Fox=5 Boat=84	87 Stapler=4 Marker=12 Note Pad=2 Tape=56 Lamp=32 Erase Board=48 Magnifier=14 Calculator=96 Paper Clip=84	88 Yo-Yo=8 Gameboy=16 Floppy Disc=2 Circle Game=32 Dude=64 Arcade Game=160
89 12x12 Happy=10 Sad=4 In Ground=20	90 15x15 Treasure=10 Map=5 Hook=50 Island=100	91 18x12 Bolt=80 Potion=10 Star=100 Gem=16 Key=2	92 22x16 Tiki=20 Flower=12 Sloth=120 Vines=10 Snake=20



<p><b>93</b></p> <p><b>25x17</b>  <b>Orange Juice=35</b>  <b>Coffee=10</b>  <b>Toaster=20</b>  <b>Eggs &amp; Bacon=200</b>  <b>Fruit=50</b></p>	<p><b>94</b></p> <p><b>23x22</b>  <b>Book Worm=60</b>  <b>Rocket Book=20</b>  <b>Open Book=6</b>  <b>Travel Book=400</b></p>	<p><b>95</b></p> <p><b>45x16</b>  <b>Megaphone=40</b>  <b>Blimp=400</b>  <b>Light Bulb=50</b>  <b>Helmet=30</b></p>	<p><b>96</b></p> <p><b>35x29</b>  <b>Crown=20</b>  <b>Ship=270</b>  <b>Chair=5</b>  <b>Watch=100</b></p>
<p><b>97</b></p> <p><b>A</b>  <b>Cupcake=7oz</b>  <b>Coffees=23oz</b>  <b>Slice of Pie=16oz</b></p> <p><b>B</b>  <b>3 TPS's=675g</b>  <b>1 TP=225g</b>  <b>Plant=2,175g</b>  <b>Lamp=453g</b></p>	<p><b>98</b></p> <p><b>Lemons=114</b>  <b>Coconuts=84</b>  <b>Passion Fruits=36</b>  <b>Watermelons=9</b>  <b>Papayas=57</b></p>	<p><b>99</b></p> <p><b>A</b>  <b>?=28</b>  <b>Pattern=Bottom Value</b>  <b>Times Right Value Plus</b>  <b>Left Value</b></p> <p><b>B</b>  <b>?=17</b>  <b>The gap between</b>  <b>each value is twice</b>  <b>the size of the gap</b>  <b>between the previous</b>  <b>two values (+2, +4,</b>  <b>+8, +16, etc.)</b></p>	<p><b>100</b></p> <p><b>There are 21 squares</b>  <b>in total.</b></p> <hr/> <p><b>101</b></p> <p><b>The value in each</b>  <b>box is the sum of</b>  <b>the two values</b>  <b>above it.</b></p> <p><b>The missing</b>  <b>numbers are (from</b>  <b>left to right):</b>  <b>1, 5, 10, 5, and 1</b></p>

# Review: The GEMS Method for Performing Order of Operations



## Order of Operations



# G

**Groupings**

$() \{ \} [ ]$

# E

**Exponents**

$n^2$

# M

**Multiply/Divide**

Left to Right

$\div / \times \cdot$

# S

**Subtract/Add**

Left to Right

$+ -$

EXAMPLE

$$(5 \times 8) \div 5 \times 2 - 1 + 3$$

STEP ONE

**GEMS**

$$(5 \times 8) \div 5 \times 2 - 1 + 3$$

Groupings First

STEP TWO

**GEMS**

$$40 \div 5 \times 2 - 1 + 3$$

There are no exponents in this example!

STEP THREE

**GEMS**

$$40 \div 5 \times 2 - 1 + 3$$

Multiply and Divide from left to right.

STEP FOUR

**GEMS**

$$16 - 1 + 3$$

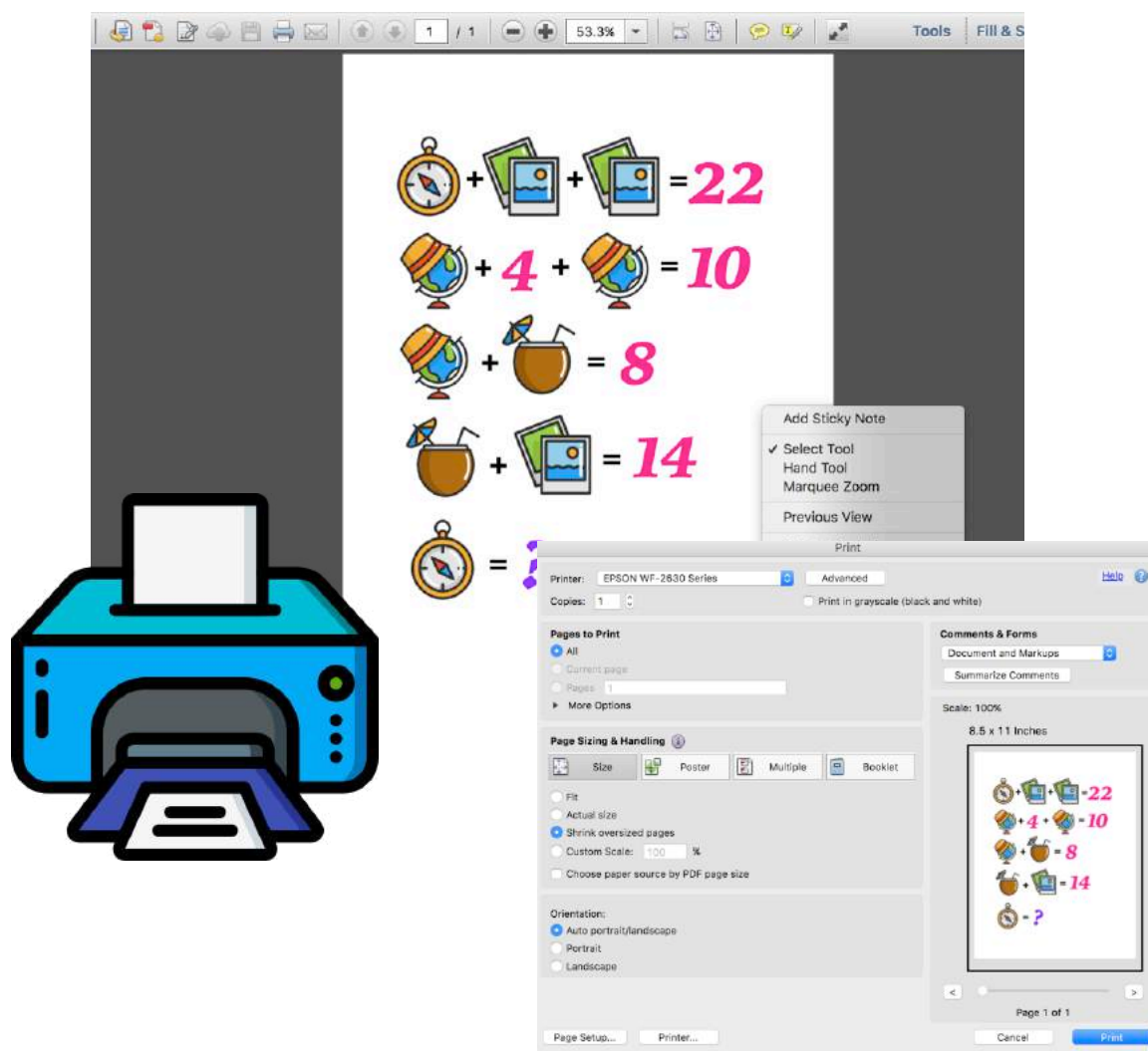
Subtract and Add from left to right.

The answer is **18**

## How to Print (PDF VERSION ONLY)

Starting with the PDF open on your computer:

- 1.) Select the page that you want to print.
- 2.) Right-click on the page and select *PRINT*.
- 3.) Select the number of copies you want.





As Seen On



**MashUp Math** is your go-to source for K-8 resources, activities, and ideas for making math education fun and exciting for your kids every day! Whether you're looking for lesson plan ideas, free resources, puzzles, and worksheets, video lessons, research and insights, or to connect with other educators, you will always find something cool, fun, and useful at [www.mashupmath.com](http://www.mashupmath.com)

Looking for free daily resources, math puzzles, fun ideas, and more? Follow us on social media and check out our video lessons on YouTube!



This workbook is a production of *Mashup Math LLC*. All rights reserved.

Contact: Please visit [www.mashupmath.com/contact-us](http://www.mashupmath.com/contact-us) to submit an inquiry.

**Copyright Information:**

All Mashup Math resources (free and paid) are solely for the purposes of Personal Instruction and Presentation, which purposes include classroom instruction or personal tutoring and creation and use of instructional examples, classwork assignments, homework assignments, tests, and quizzes (“Approved Purposes”). “Personal Instruction and Presentation” means instruction rendered by a teacher to a student either in person or via direct communication methods including but not limited to email, telephone, and video or audio chat (e.g. Skype). Except as otherwise permitted by a Mashup Math representative, you shall not distribute, publicly display, or otherwise make available any worksheets or other Mashup Math materials without the express permission of Mashup Math.