

• Word Problems About Combining

- “Some and some more” problems have an addition formula.

Formula	Problem
Some	8 miles
+ Some more	+ 7 miles
<hr/> Total	<hr/> 15 miles

- Find a missing total by adding.
- Find a missing **addend** by subtracting.
- Remember to check your answer.

Practice:

Find the missing number and check the answer. Remember to write the dollar sign in money problems.

1. Quentin wants to buy a new pair of shoes for the choir performance. Shoes cost \$43. Quentin has \$28. How much money does he need to buy the shoes?

2. Nicolette’s mother asked her how many times she had watched her favorite movie. Nicolette said she had watched it 18 times last month, but she had watched 27 times in all. How many times, before last month, had Nicolette watched the movie?

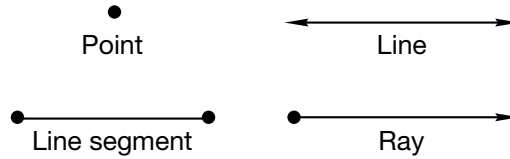
3. Write a word problem about combining for the equation to the right. Then answer the question in your word problem.

$\$38 + \$54 = b$

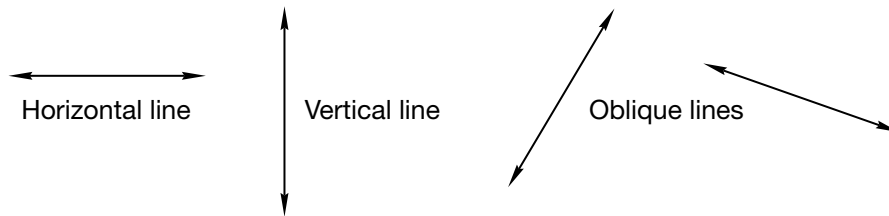
- **Lines**
- **Number Lines**
- **Tally Marks**

Lines

- A point, a line, a line segment, and a ray are shown below:

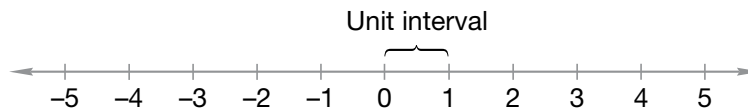


- Lines, rays, and segments can be horizontal, vertical, or oblique.



Number Lines

- A number line represents numbers in order. Integers are separated by unit intervals.



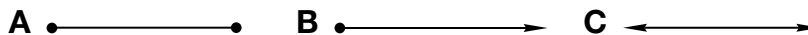
Tally Marks

- Tally marks can be used to quickly record data of things we count by ones. We then use a cross hatch to mark sets of five, so it's easier to read large numbers of tally marks.



Practice:

1. Which of these represents a line segment? _____



2. Show the number 21 using tally marks.

3. Draw a pair of oblique line segments.

- **Missing Numbers in Subtraction**

- To find missing numbers in subtraction:

If the top number is missing, add.

$$\begin{array}{r} a \\ - 4 \\ \hline 9 \end{array} \rightarrow \begin{array}{r} 7 \\ + 4 \\ \hline a \end{array} = 11$$

If the bottom number is missing, subtract.

$$\begin{array}{r} 15 \\ - n \\ \hline 9 \end{array} \rightarrow \begin{array}{r} 15 \\ - 9 \\ \hline n \end{array} = 6$$

- To check your work, put the number you found back into the original problem, and perform the subtraction.

Practice:

Find each missing number. Check your answers.

1. Bottom number missing, subtract.

$$\begin{array}{r} 14 \\ - b \\ \hline 7 \end{array}$$

2. Top number missing, add.

$$\begin{array}{r} n \\ - 8 \\ \hline 2 \end{array}$$

3. 16

$$\begin{array}{r} 16 \\ - x \\ \hline 9 \end{array}$$

4. n

$$\begin{array}{r} n \\ - 5 \\ \hline 13 \end{array}$$

5. Write a subtraction problem with the top number missing. Solve and show how to check.

6. Write a subtraction problem with the bottom number missing. Solve and show how to check.

Making a Multiplication Table

- If you know one fact family, you know four facts.

$$3 \times 4 = 12 \quad 4 \times 3 = 12 \quad 12 \div 3 = 4 \quad 12 \div 4 = 3$$

- Factors** are numbers that are multiplied together to get a **product** (the answer).
- The **Commutative Property of Multiplication** says that the order of the numbers does not matter.

$$5 \times 4 = 20$$

$$4 \times 5 = 20$$

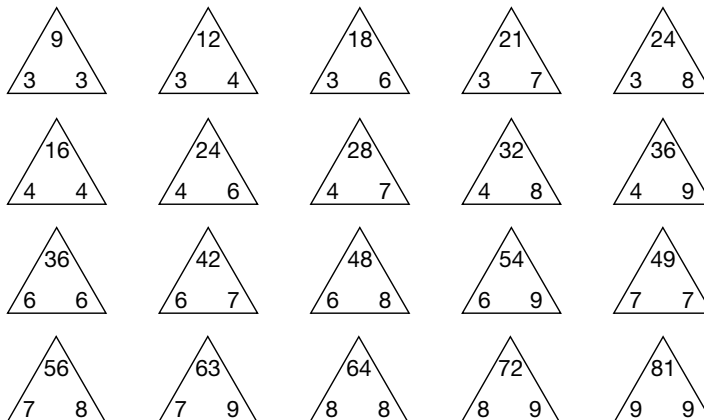
- The **Property of Zero for Multiplication** says any number times zero equals zero.

$$2 \times 0 = 0$$

- The **Identity Property of Multiplication** says that any number times one equals itself.

$$2 \times 1 = 2$$

- Practice reciting the four facts for each triangle by covering one number in the triangle at a time.

**Practice:**

Find each product.

$$1. 3 \times 7 = \underline{\hspace{2cm}} \quad 2. 8 \times 4 = \underline{\hspace{2cm}} \quad 3. 6 \times 3 = \underline{\hspace{2cm}}$$

$$4. 10 \times 0 = \underline{\hspace{2cm}} \quad 5. 9 \times 10 = \underline{\hspace{2cm}} \quad 6. 4 \times 6 = \underline{\hspace{2cm}}$$

7. The answer to a multiplication problem is called the _____.

The numbers we multiply together are called _____.

- **Word Problems About Separating**

- In word problems about separating, the missing number can be the top number, the bottom number, or the difference.
- If the top number is missing, add.

Some	m	$\$20$
Some went away	$- \$13$	$+ \$13$
What is left	$\$20$	$\$33$

- If the bottom number is missing, subtract.

Some	$\$33$	$\$33$
Some went away	$- m$	$- \$13$
What is left	$\$13$	$\$20$

- If the difference is missing, subtract as usual.

Some	$\$33$	$\$33$
Some went away	$- \$13$	$- \$13$
What is left	m	$\$20$

Practice:

- 600 students started a painting club for the city. In the sixth month there were 313 members. How many members dropped out of the club? _____

- Edwin paid \$65.00 for 5 tickets to the school play. He had \$129.00 left.
How much did Edwin have before he bought the tickets? _____

- An adventure team has 47 members. 18 of the members went camping, while the others went rafting. How many members went rafting? _____

• Multiplying by One-Digit Numbers

- Learn to carry using mental math. If the “carry” number is more than 5, write it down instead.

Example:

$$\begin{array}{r} 43 \\ \times 5 \\ \hline \end{array} \quad \begin{array}{l} 3 \times 5 = 15 \\ \text{Write 5 in the ones column.} \\ \text{Carry the 1 mentally.} \end{array}$$

$$\begin{array}{r} 43 \\ \times 5 \\ \hline 215 \end{array} \quad \begin{array}{l} 4 \times 5 = 20 \\ \text{Add the carried 1 to the product } (20 + 1 = 21). \\ \text{Write the 21.} \end{array}$$

- When multiplying money amounts that have decimals, show two decimal places in the answer for “cents.”

Practice:

1.
$$\begin{array}{r} 38 \\ \times 5 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 40 \\ \times 8 \\ \hline \end{array}$$

3.
$$\begin{array}{r} \$0.45 \\ \times 7 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 320 \\ \times 8 \\ \hline \end{array}$$

5.
$$\begin{array}{r} \$6.92 \\ \times 4 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 704 \\ \times 6 \\ \hline \end{array}$$

7.
$$\begin{array}{r} \$359 \\ \times 7 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 507 \\ \times 9 \\ \hline \end{array}$$

9.
$$\begin{array}{r} \$2.83 \\ \times 3 \\ \hline \end{array}$$

• Three Factors and Missing Factors

- We can multiply factors in any order.

$$\begin{array}{c} 3 \times 5 \times 4 \\ \downarrow \swarrow \\ 15 \times 4 = 60 \end{array}$$

$$\begin{array}{c} 3 \times 5 \times 4 \\ \downarrow \swarrow \\ 12 \times 5 = 60 \end{array}$$

$$\begin{array}{c} 3 \times 5 \times 4 \\ \downarrow \swarrow \\ 3 \times 20 = 60 \end{array}$$

- To find missing factors, first recall any multiplication facts that might use the same numbers.

Practice:

1. $5 \times 8 \times 3 = \underline{\hspace{2cm}}$

2. $10 \times 6 \times 2 = \underline{\hspace{2cm}}$

3. $2 \times 3 \times 4 = \underline{\hspace{2cm}}$

4. $5 \times 3 \times 1 = \underline{\hspace{2cm}}$

Find each missing factor.

5. $m \times 7 = 42$

$m = \underline{\hspace{2cm}}$

6. $5 \times b = 45$

$b = \underline{\hspace{2cm}}$

7. $4 \times 5 = n \times 2$

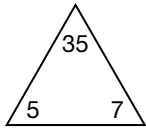
$n = \underline{\hspace{2cm}}$

8. $2 \times 8 = p \times 4$

$p = \underline{\hspace{2cm}}$

• Relationship between Multiplication and Division

- If you know one fact family, you know two multiplication facts and two division facts:



$$\begin{array}{r} 7 \\ \times 5 \\ \hline 35 \end{array}$$

$$\begin{array}{r} 5 \\ \times 7 \\ \hline 35 \end{array}$$

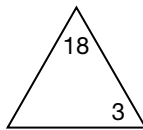
$$5 \overline{)35}$$

$$7 \overline{)35}$$

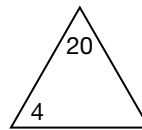
Practice:

Find the missing number in each triangle (fact family).

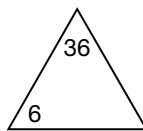
1. $3 \overline{)18}$



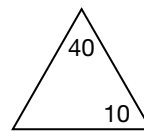
2. $4 \overline{)20}$



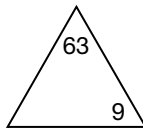
3. $6 \overline{)36}$



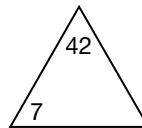
4. $10 \overline{)40}$



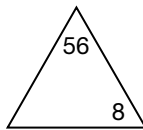
5. $9 \overline{)63}$



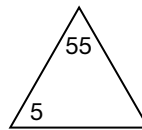
6. $7 \overline{)42}$



7. $8 \overline{)56}$



8. $5 \overline{)55}$



• Three Ways to Show Division

- Below are three ways to show division:

divisor $\overline{)$ dividend

Box

dividend \div divisor

Sign

$\frac{\text{dividend}}{\text{divisor}}$

Bar

- The answer to a division problem is called the **quotient**.
- Say the dividend first.

Practice:

- Show "15 divided by 3" in three different forms:

$\overline{) \quad \quad \quad} \quad \div \quad \quad \quad$

- Use three different division forms to show "32 divided by 8".

$\overline{) \quad \quad \quad} \quad \div \quad \quad \quad$

Use words to show how each division problem is read.

3. $4\overline{)24}$ _____ divided by _____.

4. $42 \div 6$ _____ divided by _____.

5. $\frac{27}{9}$ _____ divided by _____.

Rewrite each division problem with a division box.

6. $54 \div 6$ $\overline{) \quad \quad \quad}$

7. $\frac{40}{8}$ $\overline{) \quad \quad \quad}$

- Identify the quotient, dividend, and divisor in this equation: $24 \div 3 = 8$

quotient _____

dividend _____

divisor _____