

Warmup

1. 475 students go to lunch at the same time. Each table seats 5 children. Will there be any tables with less than 5 students (assume that all students are present)?

2. The eighth grade students in River Oaks County Schools are taking a trip to Tennessee. The adult leaders separated the 237 students into groups of 3. How many groups of 3 are there? How many children are left over?

There are _____ groups of 3

There are _____ students left over.

3. A company produces 34,821 pencils each day. Each box holds 9 pencils. After filling as many boxes as possible, will there be left over pencils to box the following day?

4. Solve for x:

$$x - 4.73 = 10.77$$

Check

I. Divisibility

Is 64 divisible by:

2? _____ 3? _____ 4? _____

5? _____ 6? _____ 7? _____

8? _____ 9? _____ 10? _____

A number is divisible by an amount if it goes in evenly, no remainder.

5. Is 68 divisible by:

2? _____ 3? _____ 4? _____

5? _____ 6? _____ 7? _____

8? _____ 9? _____ 10? _____

6.

7.

8.

9.

11. (Use the divisibility tests, you can check by division)

Divisibility Rules:

Divisible By

Rule

2

The last digit is 0,2,4,6,8

3

The sum of the digits is divisible by 3

4

The last two digits are divisible by 4

5

The last digit is 0 or 5

6

The number is divisible by 2 and 3

7

There is no simple test, divide the number by 7.

8

The last three digits are divisible by 8

9

The sum of the digits is divisible by 9

10

The last digit is 0

II. Using the Divisibility Tests with Large Numbers

Is 154,879,064 divisible by:

2? _____

3? _____

4? _____

5? _____

6? _____

7? _____

8? _____

9? _____

10? _____

12. Is _____ divisible by:

2? _____

3? _____

4? _____

5? _____

6? _____

7? _____

8? _____

9? _____

10? _____

III. Practice

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Success Check # _____

Name:

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Warmup

1. $s + 7 = 16$

2. $b - 9 = 12$

3. $74 + p = 98$

I. Solving Multiplication Equations

$$\begin{array}{c} 4s \qquad 8 \\ \hline \triangle = \end{array}$$

$$\begin{array}{c} s \\ \hline \triangle = \end{array}$$

The bears are not equal in weight.



$$7p = 77$$

To Solve Multiplication Equations:

1. Write the equation
2. To isolate the variable, divide the same amount on both sides.
3. Simplify.
4. Check your answer.

$$54 = 6x$$

5.

$$8c = 24 \quad \text{Check}$$

6.

$$16y = 64 \quad \text{Check}$$

II. Solving Division Equations

$$\frac{t}{4} = 2$$

$$\frac{t}{4} = 2$$

$$\frac{y}{3} = 10$$

To Solve Division Equations:

1. Write the equation
2. To isolate the variable, multiply the same amount on both sides.
3. Simplify.
4. Check your answer.



7.

$$\frac{m}{9} = 9 \quad \text{Check}$$

8.

$$\frac{w}{3} = 6 \quad \text{Check}$$

III. Solving Multiplication and Division Equations with Decimals

$$1.54x = 4.62 \quad \text{Check}$$

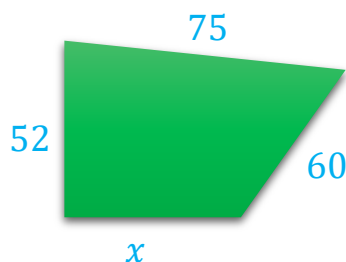
To solve multiplication and division equations with decimals follow the same rules as solving multiplication and division equations.

$$9. \quad 9.1x = 20.475 \quad \text{Check}$$

$$10. \quad \frac{z}{9.8} = 1.2 \quad \text{Check}$$

IV. Word Problems with Equations

The perimeter of a polygon is the distance around the figure. Calculate the length of the missing side of the quadrilateral (4 – sided polygon) when the perimeter is 228 cm.



Sam is twice the age of Tim. If Tim is 9 years old, how old is Sam?

John is twice the age of Tom. If John is 9 years old, how old is Tom?

11. The area of a rectangle is calculated by multiplying the length times the width. The area of a rectangle is 40 and the width is 10. Find the length. (Hint: $A = lw$)

12. Bob divided his money into two equal amounts. How much money does he have if each pile has \$194,567.

V. Practice

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Success Check # _____

Name:

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Warmup

1. Determine if 416 is divisible by

2: _____

7: _____

3: _____

8: _____

4: _____

9: _____

5: _____

10: _____

6: _____

2. $2t = 26$

3. $\frac{x}{4} = 8$

4. $t - 7 = 11$

I. Factors of a Number

Determine the factors of each number.

13

Factor:

factor x factor = number

9

8

To determine all the factors of a number: Use the divisibility tests.

Start at 1, write 1 and the number

Next test 2, is the number divisible by 2?

If Yes, $2 \times \underline{\quad} = \text{number}$, add the two factors to the list.

Continue until you are testing more than $\frac{1}{2}$ the value of the number.

Determine the factors of each number.

20

100

5. 65

6. 28

II. Prime and Composite Numbers

29

Prime Number:

A number that has exactly two factors.

1 and the number

Composite Number:

A number that has more than two factors.

25

List the prime numbers less than 50

Prime Numbers:

Determine if each number is prime or composite. (Circle the answer)

27

prime
composite

75

prime
composite

36

prime
composite

7. 55

prime
composite

47

prime
composite

93

prime
composite

III. GCF: Greatest Common Factor

20: 1, 2, 4, 5, 10, 20

100: 1, 2, 4, 5, 10, 20, 25, 50, 100

GCF of 20 and 100 is _____

GCF (Greatest Common factor)

The GCf is the largest factor that is common to each of the numbers.

Steps to find the GCF (Greatest Common factor)

1. List the factors of each number.
2. Circle the common factors.
3. The largest number circled is the Greatest Common Factor (GCF)

What is the GCF of 20 and 25?

8. What is the GCF of 12 and 24?

IV. Practice

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Success Check # _____

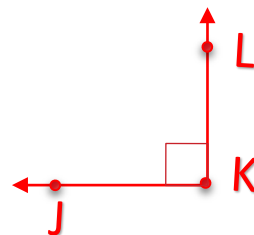
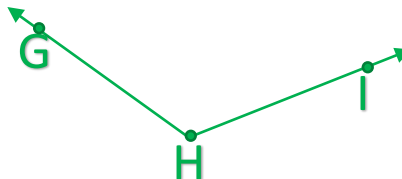
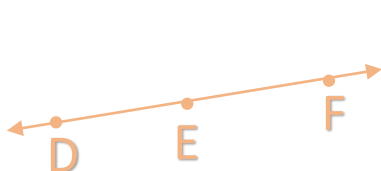
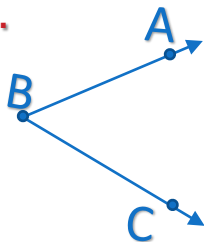
Name:

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Warmup

1.

Identify and classify each angle



Solve and Check

2.

$$y + 15 = 23$$

3.

$$s - 43 = 74$$

4.

Match the name with the drawing.

C

A

B





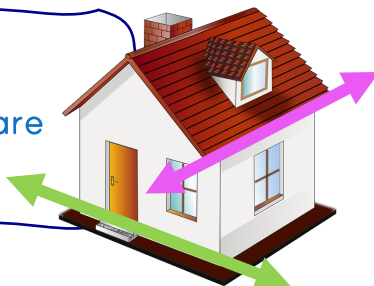
I. Relationships with Two Lines

**plane:**

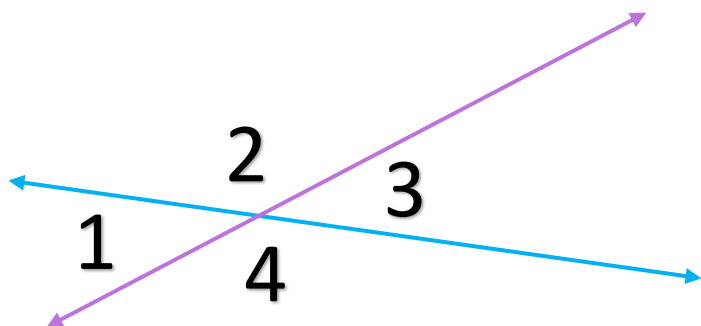
A flat surface that has no edges or boundaries.

Skew lines:

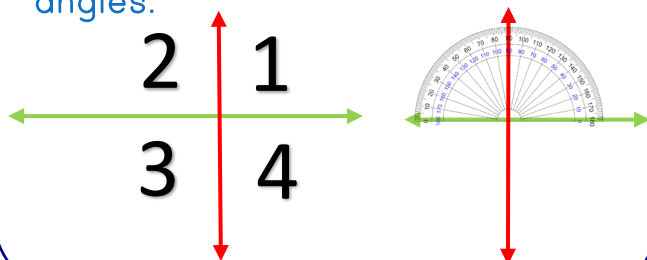
Lines that do not intersect and are not in the same plane.



Intersecting Lines: Lines that cross or touch each other at a point.



Perpendicular Lines: Lines that intersect to form right angles.



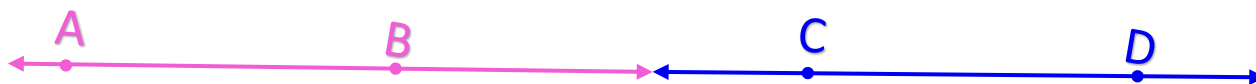
Parallel Lines: Lines in the same plane that do not touch. The symbol for parallel is $||$



$$\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$$

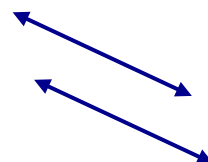
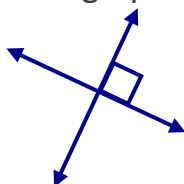
Parallel Lines are lines that do not cross.

Same Line: If the line shares all the same points, then the two lines are the same line.



5. Choose the best word for each graphic. Use each word only once.

intersecting lines
parallel lines
perpendicular lines





6. Describe each pair of lines.
 The purple lines are _____.
 The yellow lines are _____.



7. Describe each angle.
 The obtuse angle is _____.
 The acute angle is _____.
 The right angle is _____.

II Crossword Puzzle Review

On the Course page complete the Lesson 20 Geometry Crossword.

III. Practice

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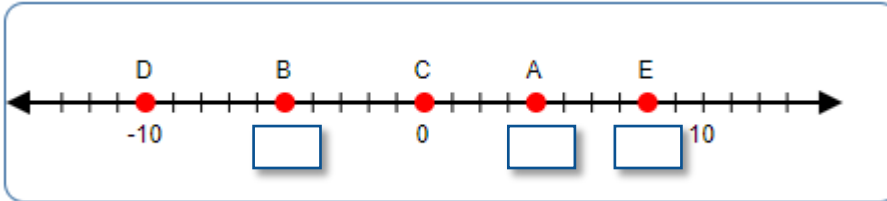
Success Check # _____

Name:

Date:

Warmup

1.



2.

The following is The Coop Coach's check book register. After writing check number 2156 for photo shoot on 10/7/2024, what is the current balance in their account?

Check Num	Date	Description of transaction	Debits (-)	Credits (+)	Balance
2154	10/4/2024	website maintenance	124.51		16417.74
2155	10/5/2024	starter and grower feed	32.98		16384.76
2156	10/7/2024	photo shoot	725.64		

3.

Identify each Property.

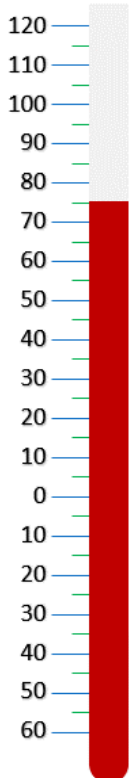
4.

$$\frac{6}{25} + \frac{2}{25} = \underline{\hspace{2cm}}$$

I. Integers

Integers are used in real-life situations.

Thermometer



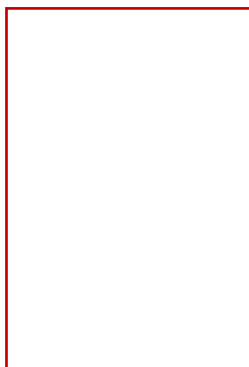
Scores

5 points off _____
10 points extra credit _____

Integer: positive numbers, zero, and negative numbers with no fractional part.

Money

A deposit of \$40 _____
A withdrawal of \$15 _____

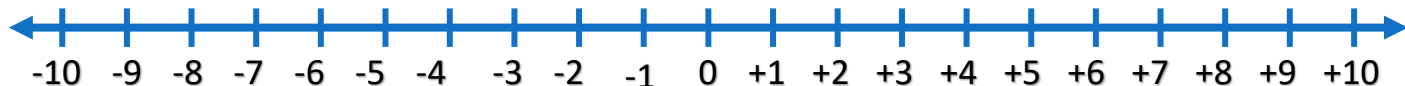
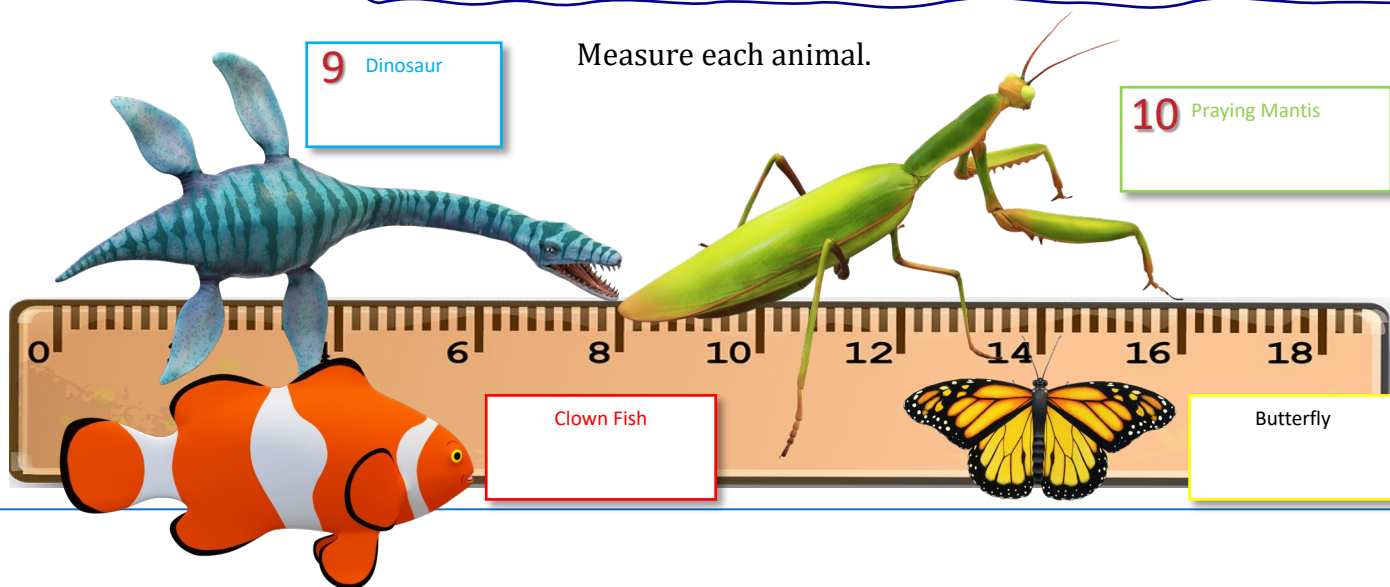


Negative

Positive

II. Absolute Value

When measuring how long an object is, the value will always be a positive number.



How far is +4 from zero? _____

How far is -4 from zero? _____

How far is -6 from zero? _____

How far is +3 from zero? _____

Absolute Value: Absolute Value is how far a number is from zero on a number line.

The absolute value of x is written as: $|x|$

It means how far is x from zero.

$$|-3| = 3 \quad | +3 | = 3$$

$$|-6| =$$

$$|+25| =$$

$$|0| =$$

11 $|-10| =$ _____ $|5| =$ _____ $|-4| =$ _____

III. Adding Integers

$$-5 + 5 =$$

$$+10 + -10 =$$

Additive Inverses: Two numbers that are opposites are also called additive inverses.

(We saw then when we discussed Addition and Subtraction are inverse operations.)

The sum of additive inverses is _____

$$+7 + -7 =$$

$$-2 + +2 =$$

Sam owes John four dollars. What is the result after he borrows two more dollars?

Jane earned \$20 for babysitting on Friday. How much does she have after she earns \$35 for babysitting on Saturday?

To add integers with the same signs:

Add the numbers

Keep the sign

$$-4 + -8 =$$

$$+5 + +1 =$$

$$-10 + -7 =$$

$$+3 + 2 =$$

13.

$$-8 + -3 =$$

$$+4 + +9 =$$

$$-3 + -12 =$$

$$+8 + 12 =$$

14.

Nathaniel's mowing customer paid him \$15. The next day he bought a starting gear for \$7. How much does Nathaniel have?

Anna's Algebra textbook cost \$50. She gave the cashier \$40. What is the result of this transaction?

To add integers with different signs:

Find the difference

Sign of the larger number

$$-5 + +1 =$$

$$+3 + -2 =$$

15.

$$+8 + -2 =$$

$$+7 + -9 =$$

$$-6 + +10 =$$

$$-3 + 6 =$$

16

17

IV. Practice

18										19									
										20									
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										29					30				
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Success Check # _____

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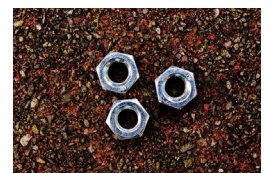
1. $+15 + +4 =$

2. $7 + -11 =$

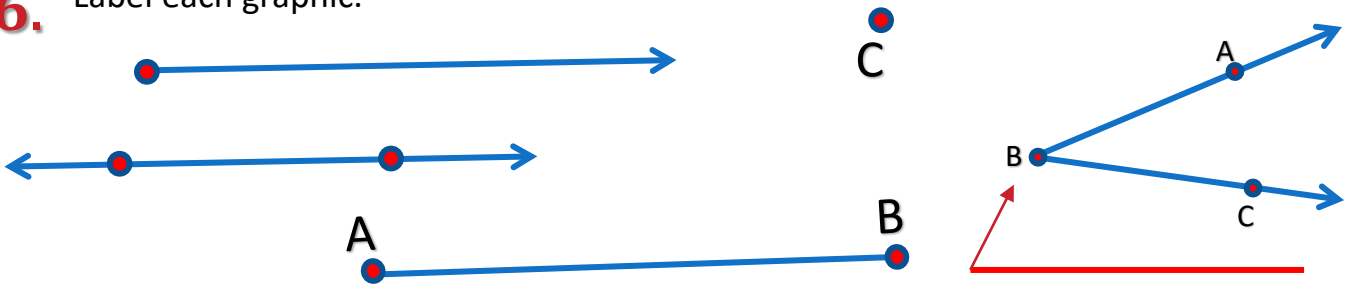
3. $-3 + 14 =$

4. $-8 + -4 =$

5. Write the name of each item pictured.

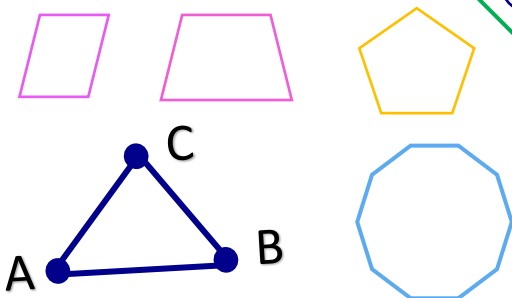


6. Label each graphic.

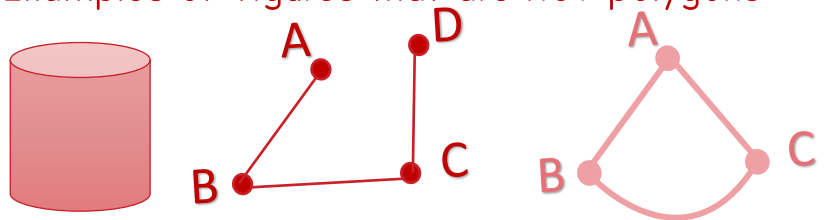


I. Polygons

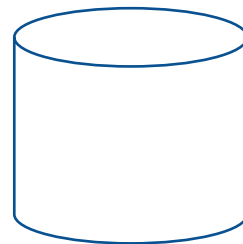
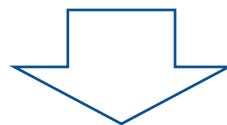
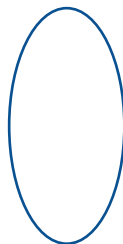
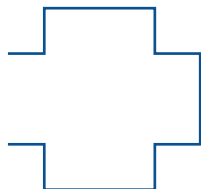
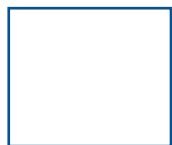
Examples of polygons

**Polygon:** A closed figure in a plane made of 3 or more line segments.

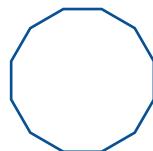
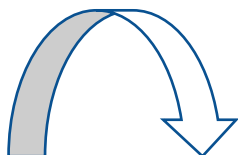
Examples of figures that are NOT polygons



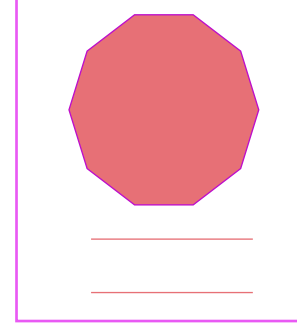
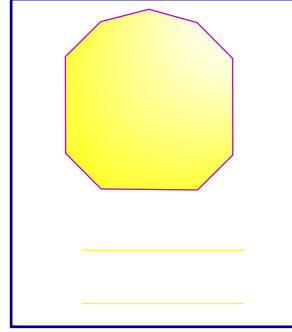
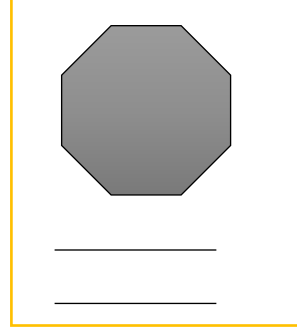
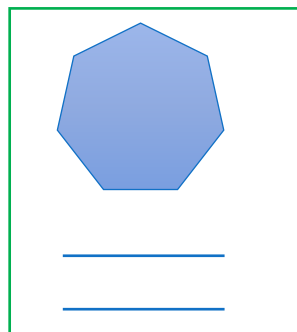
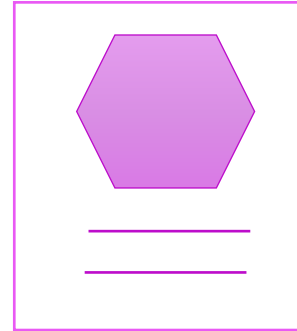
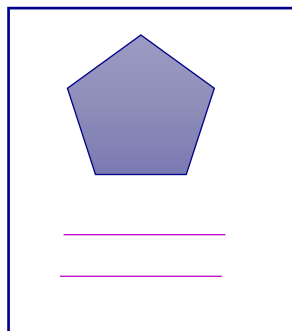
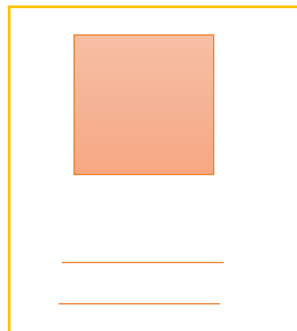
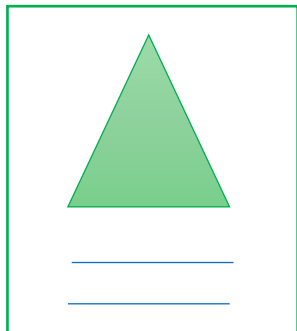
Determine if each figure is a polygon.



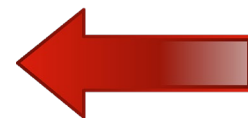
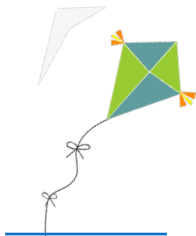
7. Determine if each figure is a polygon. If it is not, tell why it is not a polygon.



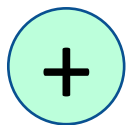
II. Classifying Polygons



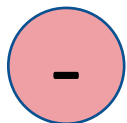
9. Write the name of the polygon shown in each graphic.



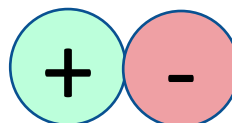
III. Using Counters to Calculate Sums



represents +1

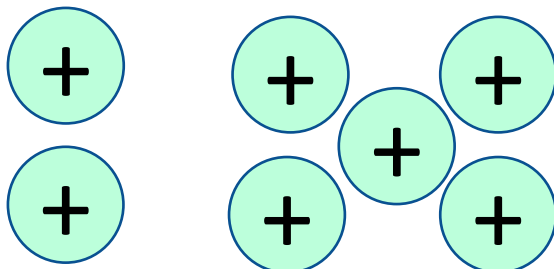


represents -1

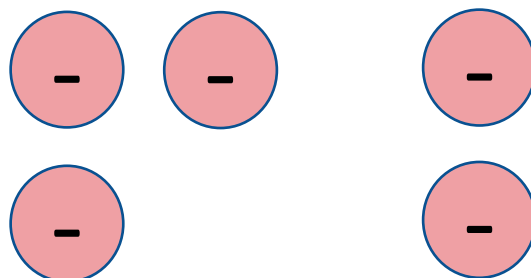


represents 0

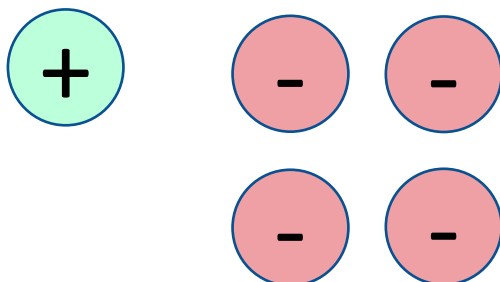
$$+2 + +5$$



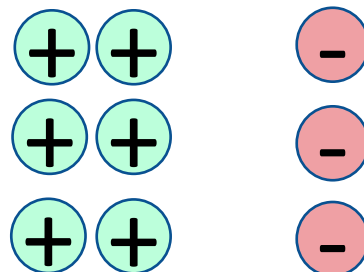
$$-3 + -2$$



$$+1 + -4$$



$$+6 + -3$$



10. $-3 + +4$

11. $-6 + -5$

12.

IV. Practice

13	14
15	16
17	18
19	20
21	22
23	24

Success Check # _____

Name:

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Warmup

1. Identify each polygon

$$2. \begin{array}{l} 4 + -10 = \underline{\hspace{2cm}} \\ -9 + -5 = \underline{\hspace{2cm}} \end{array} \quad \begin{array}{l} 7 + 6 = \underline{\hspace{2cm}} \\ -1 + 8 = \underline{\hspace{2cm}} \end{array}$$

3. Solve and Check

$$18x = 5.4$$

4.

The following is Math Tutor's check book register. After writing check number 4025 for Samsung Tablet on 9/20/2021, what is the current balance in their account?

Check Num	Date	Description of transaction	Debits (-)	Credits (+)	Balance
4023	9/7/2021	Color Printer	154.21		12346.74
4024	9/15/2021	Monitor	500.00		11846.74
4025	9/20/2021	Samsung Tablet	725.65		

I. Statistics

Statistics: Statistics is the branch of mathematics dealing with collecting, organizing, interpreting, and presenting data.

Surveys can be as small as 1 question.

Survey people who are in a chicken group.

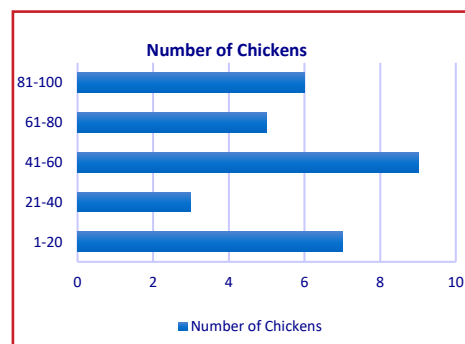
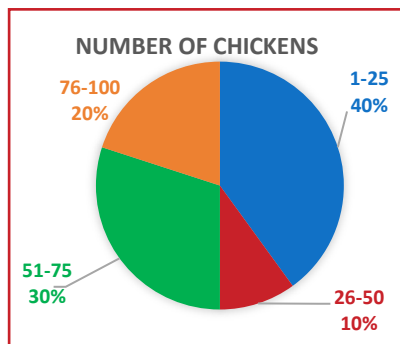


How many chickens are you currently raising?

Samples: Since we can not survey all people, a smaller group of people are chosen randomly to represent the entire population.

Data: Data are pieces of information. Data is often numerical. The group of data is often referred to as the set of data.

# of chickens					
7	48	10	43	4	67
9	53	59	93	59	86
50	62	1	15	99	5
56	6	67	100	94	60
4	58	24	5	86	10



It is easier to understand data when it is organized.

II. Tally Marks

Tally Marks: Tally Marks are counters used to make the process of recording the data more accurate.

1= _____	6= _____
2= _____	7= _____
3= _____	8= _____
4= _____	9= _____
5= _____	10= _____

6. What number is represented by the following tally marks?

|||| ||| =

|||| =

|||| || =

III. Scale and Intervals

Scale: The scale includes the least and greatest value.

Interval: The interval separates the scale into equal parts.

- Choose an interval that is consistent. (if 5 numbers are in each interval, all the intervals must have 5 numbers.)
- Use a scale that has all the numbers in the data set.
- There should be at least one number in the data set in both the lowest category and the highest category.

How many members are in the data set 1-9? _____
, they are _____

How many members are in the data set 0-9? _____
, they are _____

What are the intervals for data whose scale is 1 to 100 if there must be 2 intervals? 4 intervals? 5 intervals? 10 intervals?

2 Intervals?

10 Intervals?

4 Intervals?

5 Intervals?

8. What are the intervals for data whose scale is 70 to 99 if there must be 5 intervals?

IV. Frequency Tables

Frequency Tables: A frequency table organizes data by separating the information into given intervals.

	Tally	Frequency
interval		

# of chickens					
7	48	10	43	4	67
9	53	59	93	59	86
50	62	1	15	99	5
56	6	67	100	94	60
4	58	24	5	86	10

What is the smallest number of chickens someone is raising? _____

The largest amount? _____

The scale for the chicken survey is
_____ - _____

How many people were surveyed? _____

How many people are raising between 21-40 chickens? _____

Write one sentence that can explain the distribution of data.

What is your favorite color?

blue

red

green

purple

What color was liked the most? _____

What color was liked the least? _____

How many students were surveyed? _____

How many children in your family?

1

2

3

4

5

6

7

8

IV. Practice

11	12
13	14
15	16
17	18
19	20

Success Check # _____

Name:

Date:

Warmup

1. Bob has \$40. He buys a watch for \$26.
He now has \$ _____

2. John received and paid a restaurant bill for \$150 before he realized it was not his bill. How much does he have after the restaurant refunds his money if he currently has \$500.
He now has \$ _____

3.

$$\begin{aligned} 4 + -2 &= \underline{\hspace{2cm}} \\ -6 + -5 &= \underline{\hspace{2cm}} \\ -8 + 3 &= \underline{\hspace{2cm}} \\ -9 + 10 &= \underline{\hspace{2cm}} \end{aligned}$$

To add integers
with the same signs:

with different signs:

4.

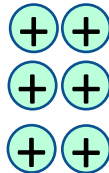
$$\begin{array}{ll} 4 - 2 = \underline{\hspace{2cm}} & 4 + -2 = \underline{\hspace{2cm}} \\ 7 - 8 = \underline{\hspace{2cm}} & 7 + -8 = \underline{\hspace{2cm}} \\ 5 - 1 = \underline{\hspace{2cm}} & 5 + -1 = \underline{\hspace{2cm}} \\ 9 - 6 = \underline{\hspace{2cm}} & 9 + -6 = \underline{\hspace{2cm}} \end{array}$$

I. Subtracting Integers

$$6 - 8 =$$

Have \$6 pay \$8.

Using Counters



Using a Number Line



Calculate:

$$4 - 7 =$$

$$3 - 4 =$$

$$6 - 10 =$$

$$2 - 8 =$$

(Reminder: Blue questions allow you to practice as many times as you need to understand the concept.)

5.



$$2 - -7 =$$

Have \$2
need to be
refunded a
payment of \$7.

Using Counters



Using a Number Line



Solve each by adding the opposite:

$$4 - -3 =$$

$$-5 - +9 =$$

$$-6 - -11 =$$

$$+7 - +8 =$$

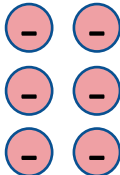
6.



$$-6 - -2 =$$

Owe \$6 and
need to be
refunded a
payment of \$2.

Using Counters



Using a Number Line



Solve each by adding the opposite:

$$-3 - -2 =$$

$$-6 - +3 =$$

$$-8 - -12 =$$

$$+10 - +4 =$$

7.



To subtract integers:

Change the subtraction to “adding the opposite”
Follow the addition rules

II. Algebraic Expressions with Integers

Evaluate each expression when
 $a=2$, $b=5$, and $c=-6$

$b-10$

$a-b$

$c-a$

Evaluate each expression when
 $a=-5$, $b=8$, and $c=-10$

$b-a$

$a+c$

$c-b$

9. Evaluate each expression for $x = -15$, $y = 7$, and $z = -9$

$y + x =$

$y + z =$

$z - y =$

$x - y =$

III. Word Problems with Integers**Calculate the Range**

Number of Siblings		
# Siblings	Tally Marks	Frequency
1	###	5
2	###	5
3	III	3
4	### II	7
5	###	5
6	III	3

largest = _____

smallest = _____

largest-smallest = _____

The range is _____

The scale is _____

Range: The difference of the
largest value and smallest value

The record low temperature in New York was on February 9, 1934 in Stillwater Reservoir. The temperature was 52° below zero. The highest temperature recorded in New York was on July 9, 1936 in New York City at 106° . What is the range of record temperatures for New York?

To subtract integers:

Change the subtraction to “adding the opposite”
Follow the addition rules

Addition

Same Signs

Add the numbers
Keep the sign

$$+5 + +9$$

$$-7 + -5$$

The signs are the same
 $5 + 9 = 14$

The signs are the same
 $7 + 5 = 12$

The signs are positive,
the answer is positive

The signs are negative,
the answer is negative

$$+5 + +9 = +14$$

$$-7 + -5 = -12$$

Different Signs

Find the difference
Sign of the larger number

$$-5 + +9$$

$$-7 + +5$$

The signs are the different,
Find the difference
 $9 - 5 = 4$

The signs are the different,
Find the difference
 $7 - 5 = 2$

9 is larger, the answer
is positive

7 is larger, the answer
is negative

$$-5 + +9 = +4$$

$$-7 + +5 = -2$$

Subtraction

Change Subtraction to Addition

$$+5 - +9$$

$$2 - -4$$

Change subtraction to Addition
Change $+9$ to -9

Change subtraction to Addition
Change -4 to $+4$

$$+5 + -9 = -4 \quad (\text{Follow the Rules of Addition})$$

$$2 + +4 = +6$$

Work Space

IV. Practice

12

13

14

15

16

17

18

19

20

21

Success Check # _____

Name:

Date:

Name:

Attempt #:

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

Name:

Attempt #:

Test # ____ Answer Sheet

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20