

VAAP Version

VESOL Vocabulary Word Wall Cards

VESOL Mathematics vocabulary word wall cards provide a display of mathematics content words and associated visual cues to assist in vocabulary development. The cards should be used as an instructional tool for teachers of students with severe cognitive deficiency's as well as a reference for the students.

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[Number and Number Sense](#)

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Computation and Estimation

Card Name	VESOL	Card Name	VESOL
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Addition	3.5, 3.6, 4.9, 4.11, 4.13, 5.8, 5.9, 5.13, 5.17, 6.4, 6.6, 6.15, 7.12, 8.8, 8.13, HS.3, HS.6	Integer Addition/Subtraction Array	6.6, 7.13, 8.1
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Subtraction	3.5, 3.6, 4.9, 4.11, 4.12, 4.13, 5.8, 5.9, 5.11, 6.4, 6.6, 6.15, 7.12, 8.8, 8.13, HS.3, HS.6	Penny	4.14, 5.6, 7.4, 7.12, 8.2, 8.8, HS.3
Subtraction	3.5, 3.6, 4.9, 4.11, 4.12, 4.13, 5.8, 5.9, 5.11, 6.4, 6.6, 6.15, 7.12, 8.8, 8.13, HS.3, HS.6	Nickel	4.14, 5.6, 7.4, 7.12, 8.2, 8.8, HS.3, HS.4
Separate	3.5, 3.8, 4.13, 4.14	Nickel with Pennies	4.14, 5.6, 7.4, 7.12, 8.2, 8.8, HS.3, HS.4
Multiplication	3.7, 4.8, 6.6, 6.7, HS.3	Dime	4.14, 5.6, 6.5, 7.4, 7.12, 8.2, 8.8, HS.3, HS.4
Multiplication Array	3.7, 4.8, 6.7, HS.3	Dime with Pennies	4.14, 5.6, 6.5, 7.4, 7.12, 8.2, 8.8, HS.3, HS.4
Number Line	4.12, 5.1, 6.1, 6.2, 6.3, 7.1, 8.1, HS.3	Quarter	4.14, 5.6, 6.5, 7.4, 7.12, 8.2, 8.8, HS.3, HS.4
Number Line Model	4.8, 6.6, 6.7	Quarter with Pennies	4.14, 5.6, 6.5, 7.4, 7.12, 8.2, 8.8, HS.3, HS.4
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Measurement

Card Name	VESOL	Card Name	VESOL
Penny	3.8	Elapsed Time: Analog	5.14, 6.8, 7.5, 8.3, HS.2
Nickle	3.8	Weight: Heavier/Lighter	4.17, 5.16, 8.19, 8.22
Nickle with Pennies	3.8	Length: Longer/Shorter	3.9, 3.11, 4.16, 6.9
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Dime with Pennies	3.8	Temperature: Hotter/Colder	3.10
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AM	3.13, 4.18, 5.14, 6.8, 7.5, 8.3, HS.2	Area: Formula	4.15, 5.12, 7.6, 8.5
PM	3.13, 4.18, 5.14, 6.8, 7.5, 8.3, HS.2	Perimeter	3.11, 6.9
Clockwise	Not directly related to any VESOL	Volume: $V=lwh$	5.12, 5.13, 7.6
Elapsed Time: Digital	5.14, 6.8, 7.5, 8.3, HS.2	Volume: $V=Bh$	5.12, 5.13, 7.6

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Geometry

Card Name	VESOL	Card Name	VESOL
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Angle	3.14, 4.19, 5.15	Smaller/Larger	3.3, 3.10, 4.4, 4.6, 6.3
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Rectangle: Angle and Side	7.8	Coordinate Plane: Quadrant I & II	7.9

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Card Name	VESOL	Card Name	VESOL
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Certain	7.10, 8.6	Line Graph	7.11, 8.7, HS 10
Likely	7.10, 8.6	Line Plot	5.15, 6.12
Unlikely	7.10, 8.6	Scatter Plot	8.7, HS.10
Equally Likely	7.10, 8.6	Positive Relationship	8.7, 8.10, 8.11, HS.10
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Card Name	VESOL	Card Name	VESOL
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Connecting Representations	6.14, 8.9, 8.12, HS.9	Variable to Algebraic	5.15, 5.18, 7.12, 8.8, HS.1, HS.3
Function	8.9, HS.9	Variable to Algebraic	8.8, HS.1, HS.3
Slope	8.10, 8.11, 8.12, HS.10	Order of Operations	6.15, 8.8, HS.3, HS.5
Slope: Types	8.10, 8.11, 8.12, HS.10	Equation: One-step	7.13, 8.13, HS.6
Equation	6.15, 7.13, 8.13, HS.6	Equation: Two-step	8.13, HS.6
Expression	6.15, 7.13, 8.13, HS.6	Inequality	6.16, 7.14, 8.14, HS.8
Variable	6.15, 7.13, 8.13, HS.6	Sales Tax	HS.7

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Number and Number Sense

Number



2

two



numeral

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Number



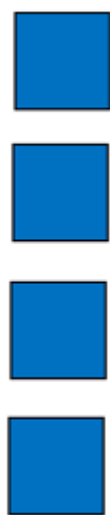
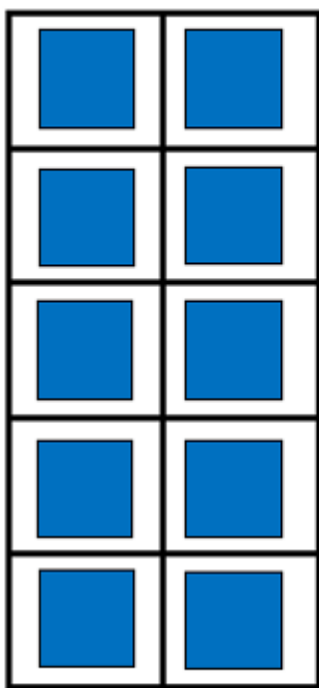
9

nine



numeral

Number



14

fourteen

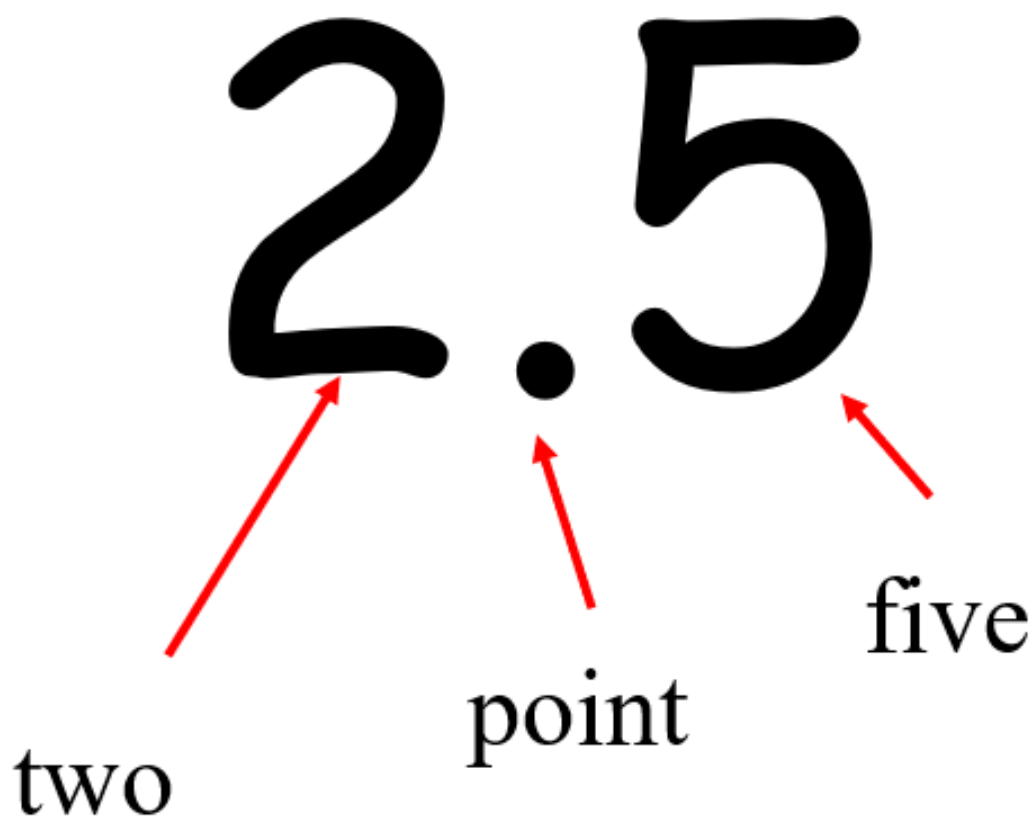


numeral

Numerical

two point five

two and five tenths

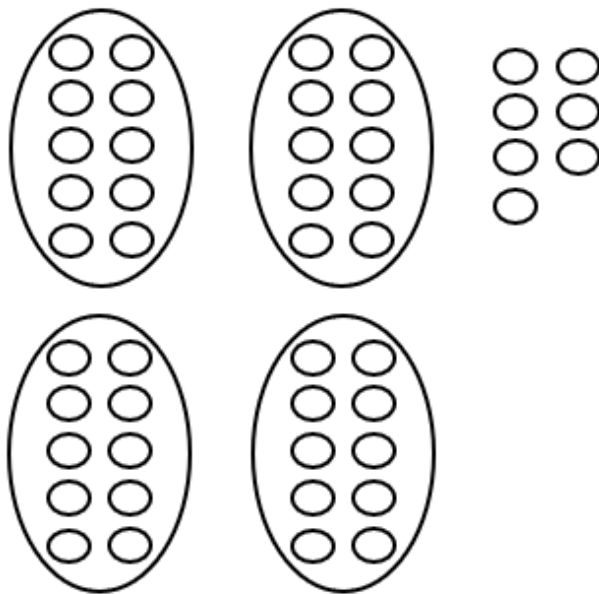


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Place Value

Tens Ones

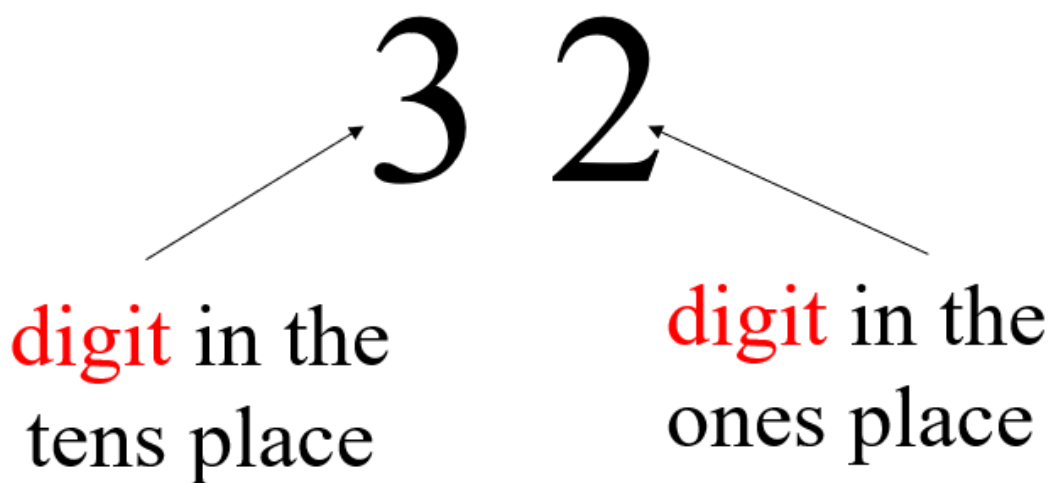
4 7



40 and 7

Digit

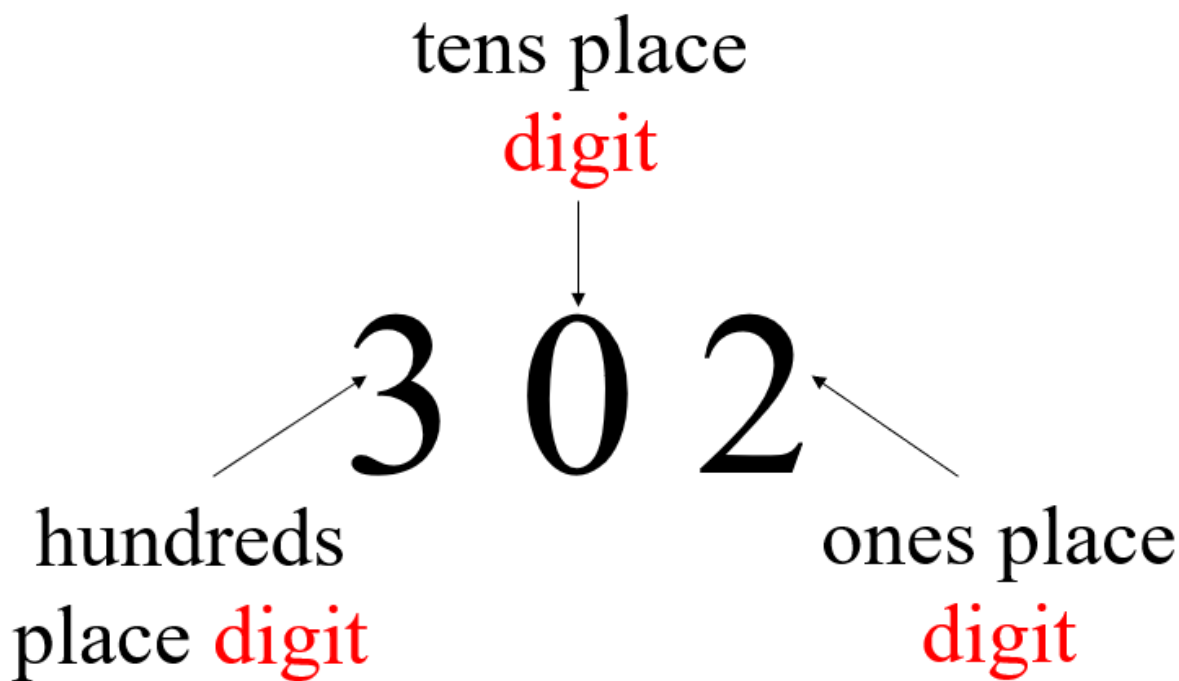
a numeral from 0 to 9
part of a number



two-**digit** number

Digit

a numeral from 0 to 9,
part of a number



three-digit number

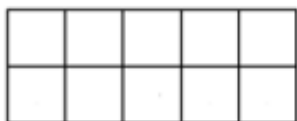
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Counting by Ones

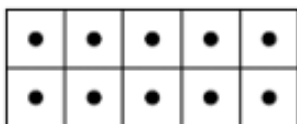


0 1 2 3 4 5 6

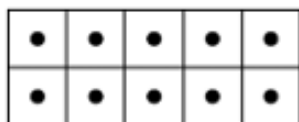
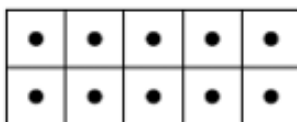
Counting by Tens



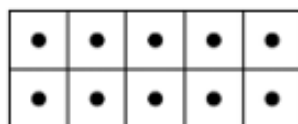
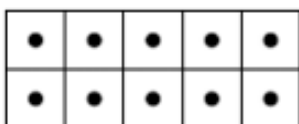
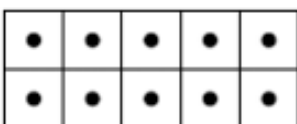
0



10



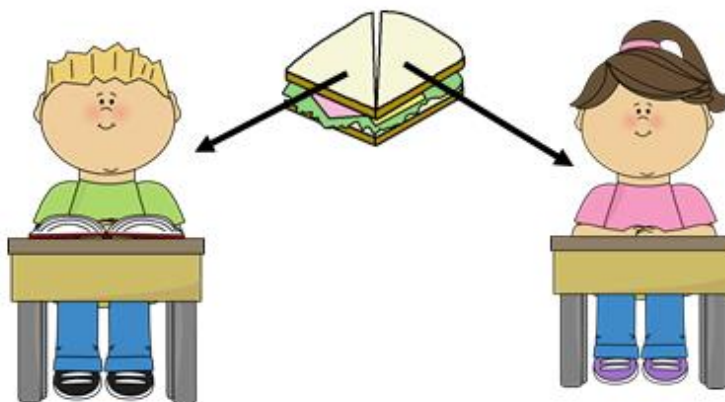
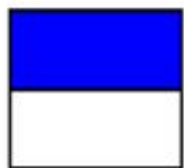
20



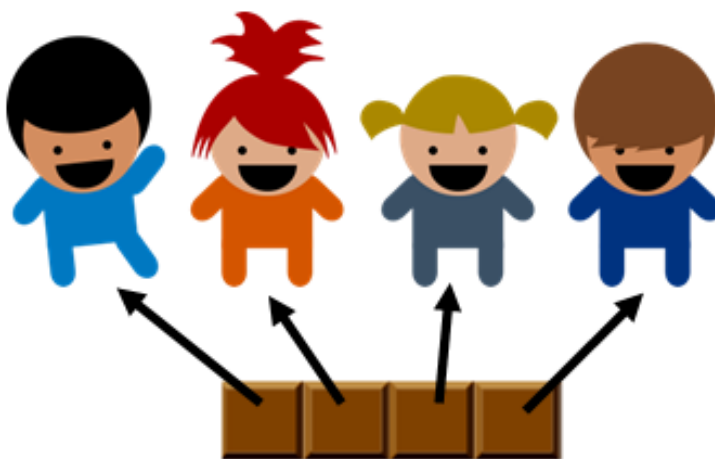
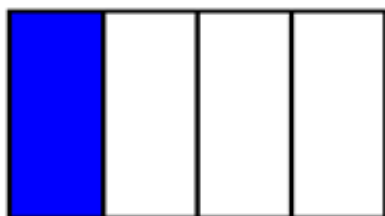
30

Fraction: Half and Fourth

one-half

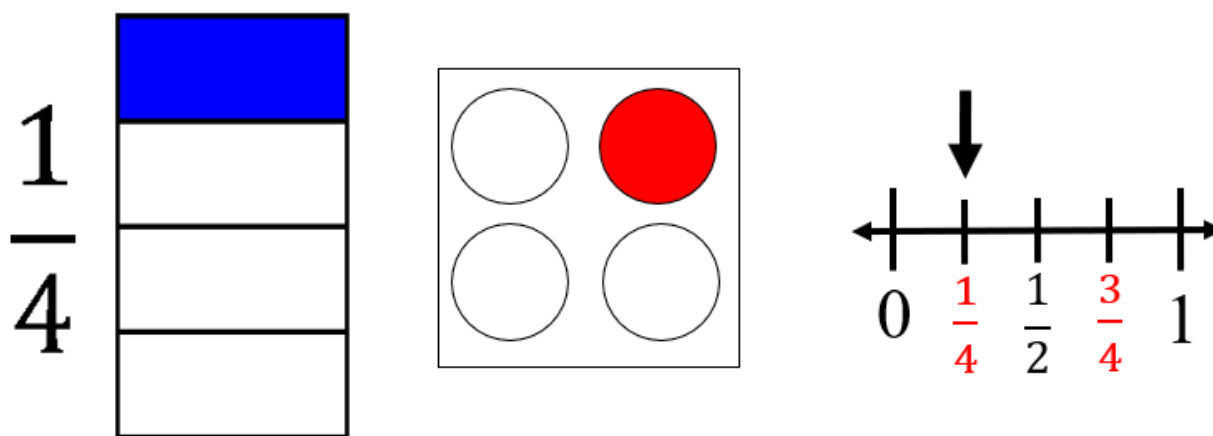
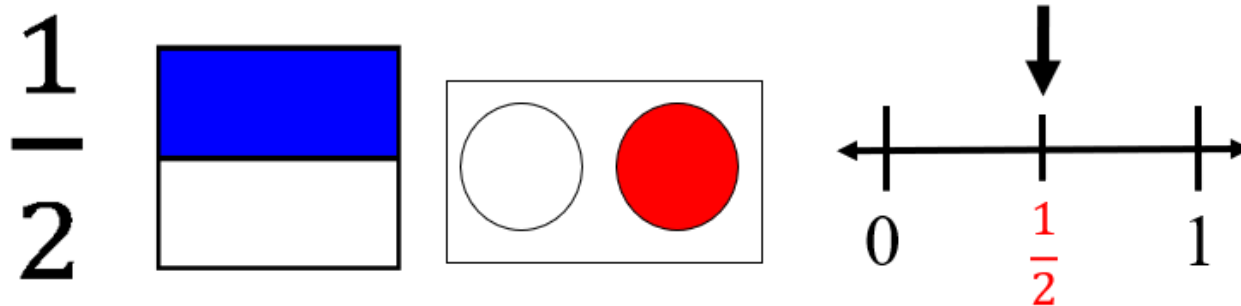


one-fourth



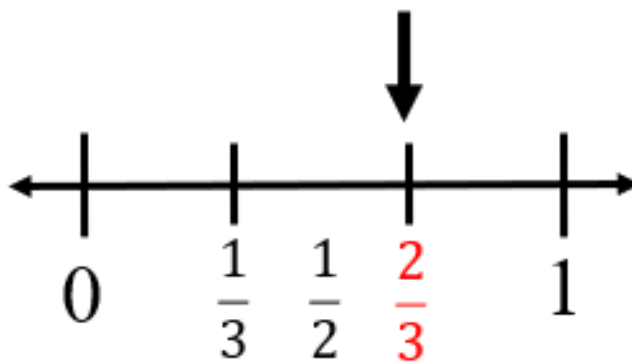
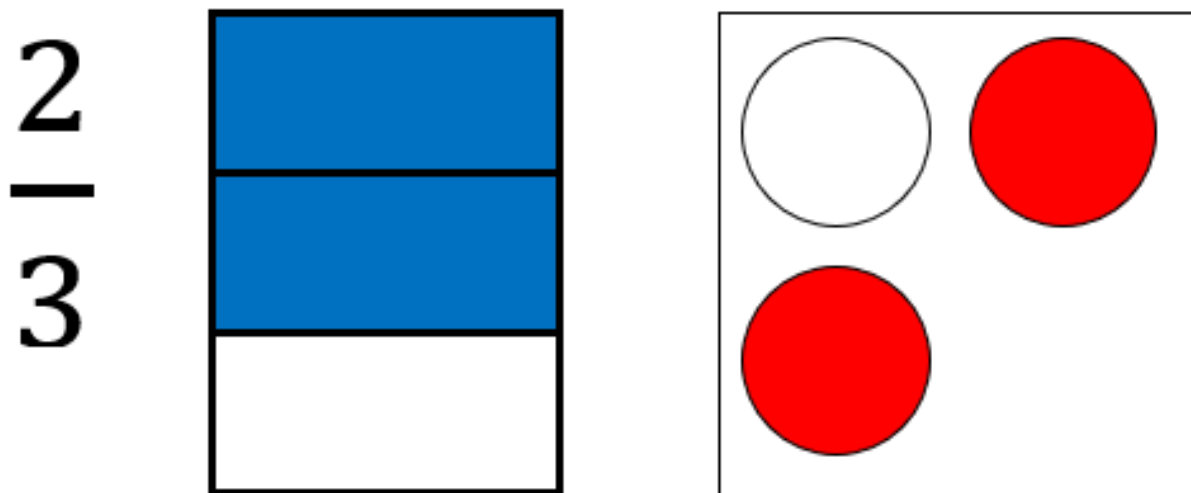
Fraction:

Half and Fourth



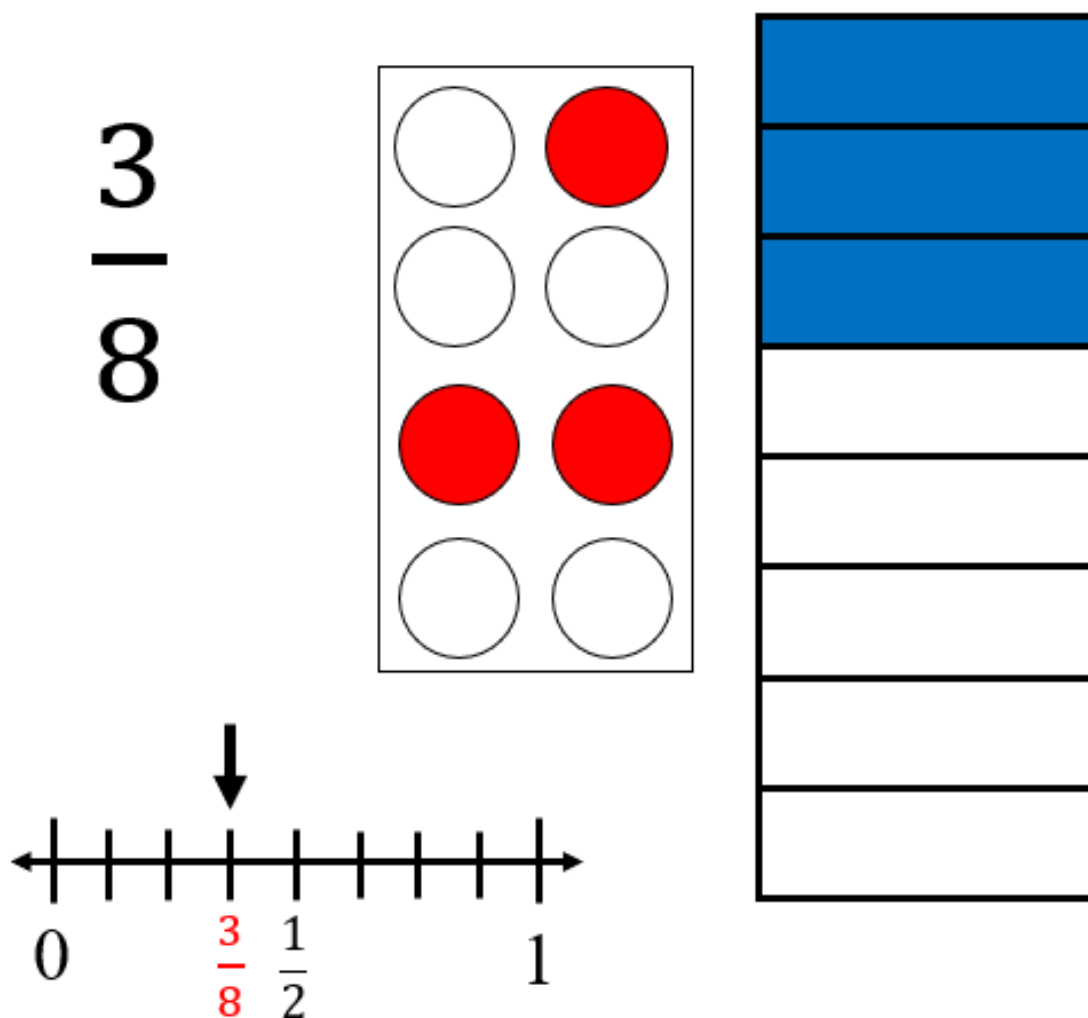
Fraction:

Models for two-thirds



Fraction:

Models for three-eighth



Numerator/ Denominator

numerator **2**

(number of equal parts being considered)

3

denominator

(number of equal parts in the whole)

The candy bar was divided into 4 equal parts. Three friends ate 3 pieces of the candy bar, so $\frac{3}{4}$ of the candy bar has been eaten.



Mixed Number



whole

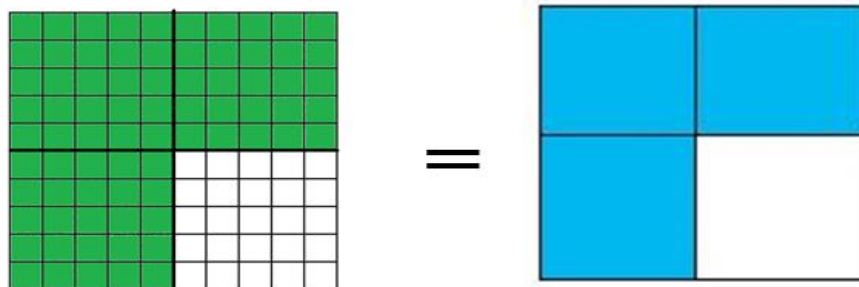


fraction

$$\frac{16}{10} = 1 \frac{6}{10} = 1.6$$

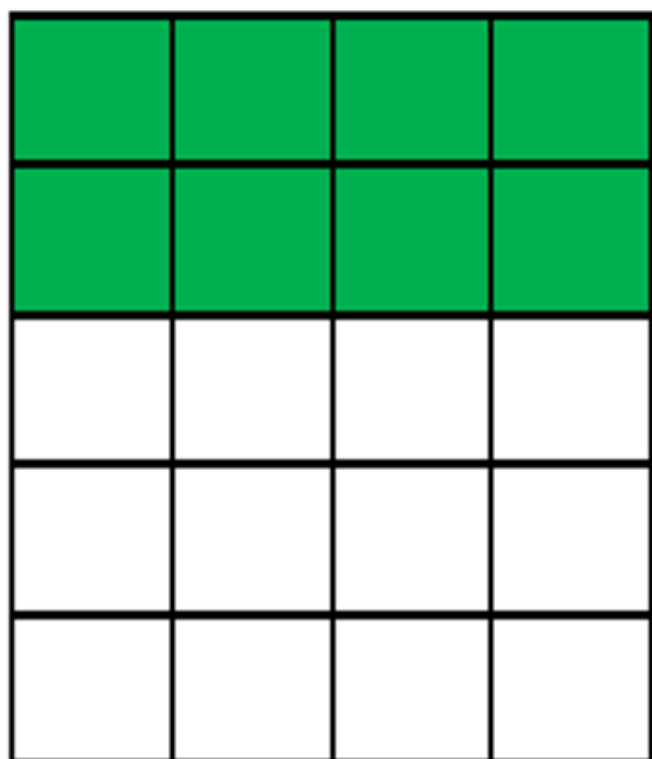
Equivalent

$$\frac{75}{100} = \frac{3}{4}$$



$$0.75 = \frac{3}{4}$$

Equivalent Relationships

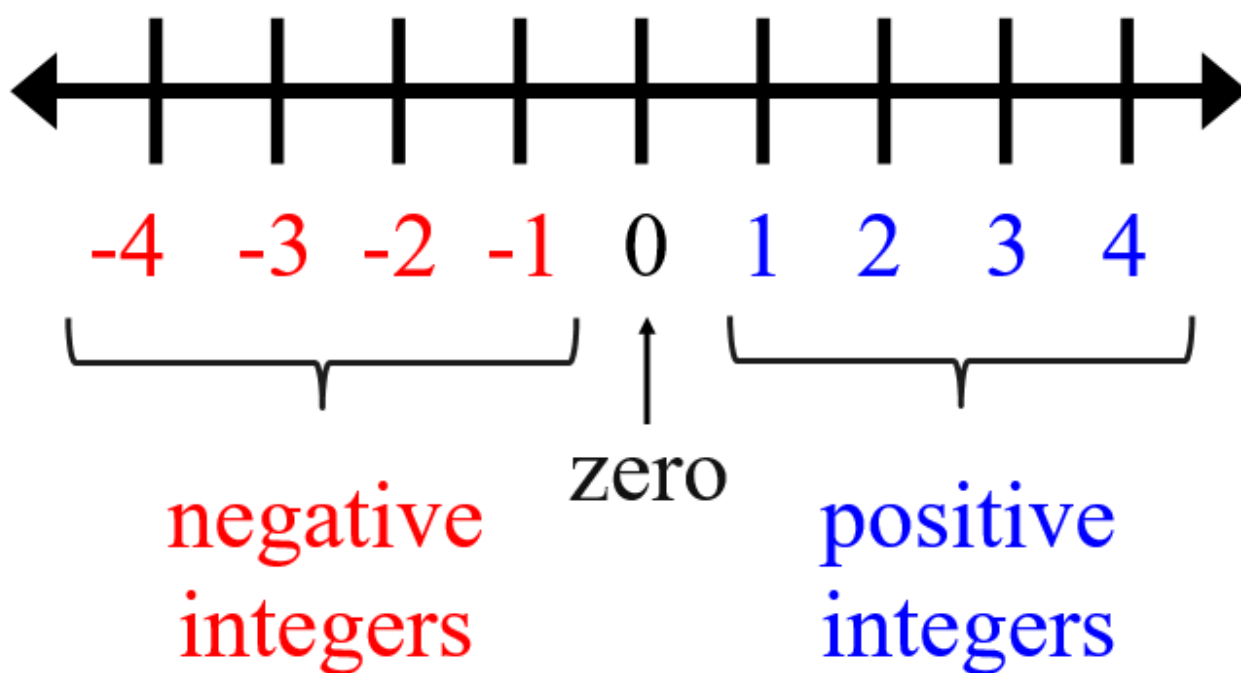


Fraction: $\frac{8}{20} = \frac{2}{5}$

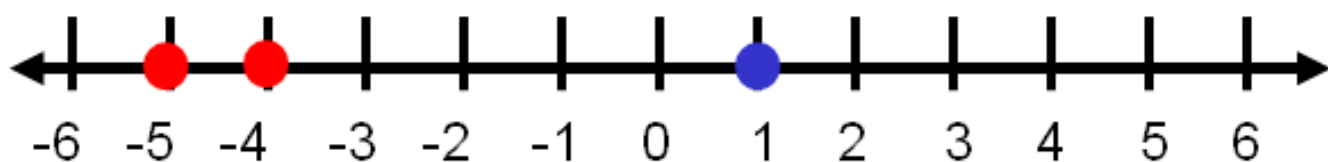
Decimal: 0.4

Integers

whole numbers and their
opposites



Comparing Integers



$$-5 < 1 \text{ or } 1 > -5$$

$$-5 < -4 \text{ or } -4 > -5$$

Perfect Squares

$$0^2 = 0 \cdot 0 = 0$$

$$1^2 = 1 \cdot 1 = 1$$

$$2^2 = 2 \cdot 2 = 4$$

$$3^2 = 3 \cdot 3 = 9$$

$$4^2 = 4 \cdot 4 = 16$$

$$5^2 = 5 \cdot 5 = 25$$

Perfect Cubes

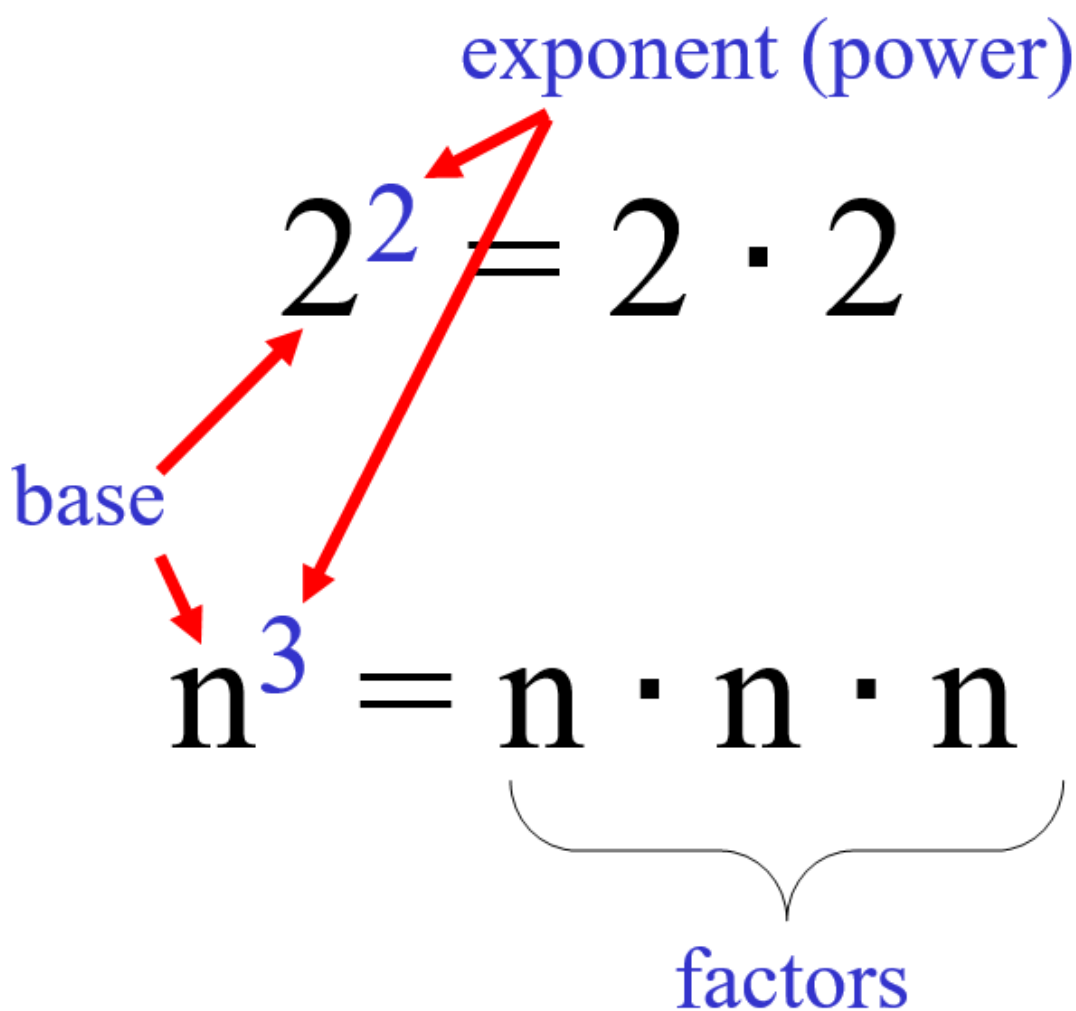
$$0^3 = 0 \cdot 0 \cdot 0 = 0$$

$$1^3 = 1 \cdot 1 \cdot 1 = 1$$

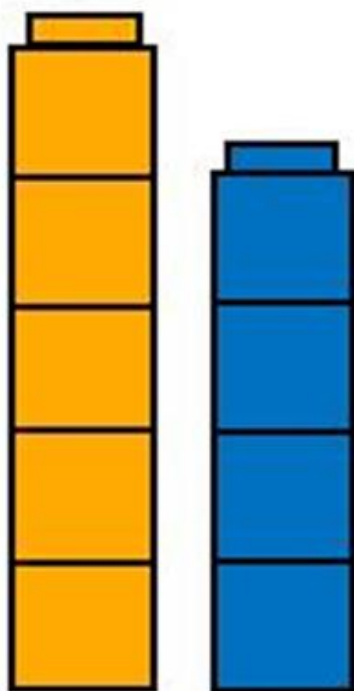
$$2^3 = 2 \cdot 2 \cdot 2 = 8$$

$$3^3 = 3 \cdot 3 \cdot 3 = 27$$

Exponential Form

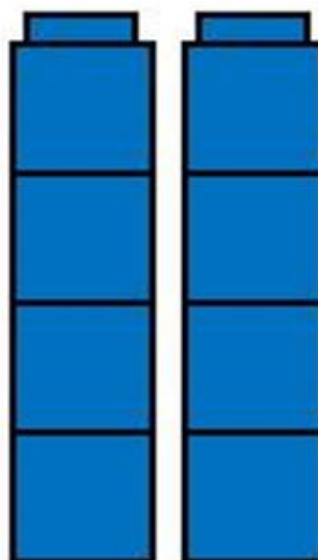


Even and Odd Numbers

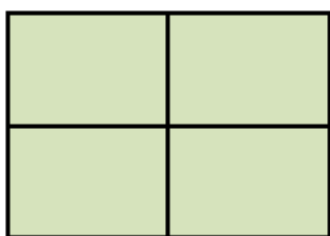


9 is odd

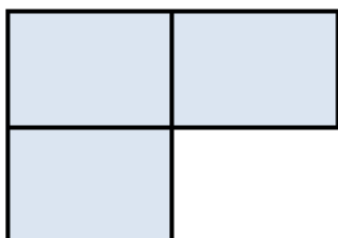
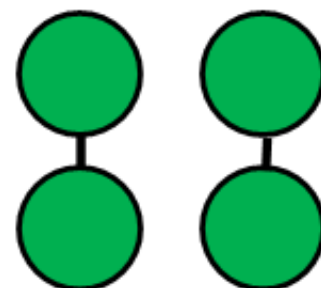
8 is even



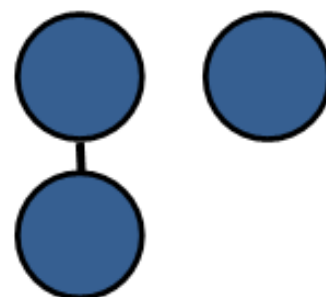
Even and Odd Numbers



4 – even

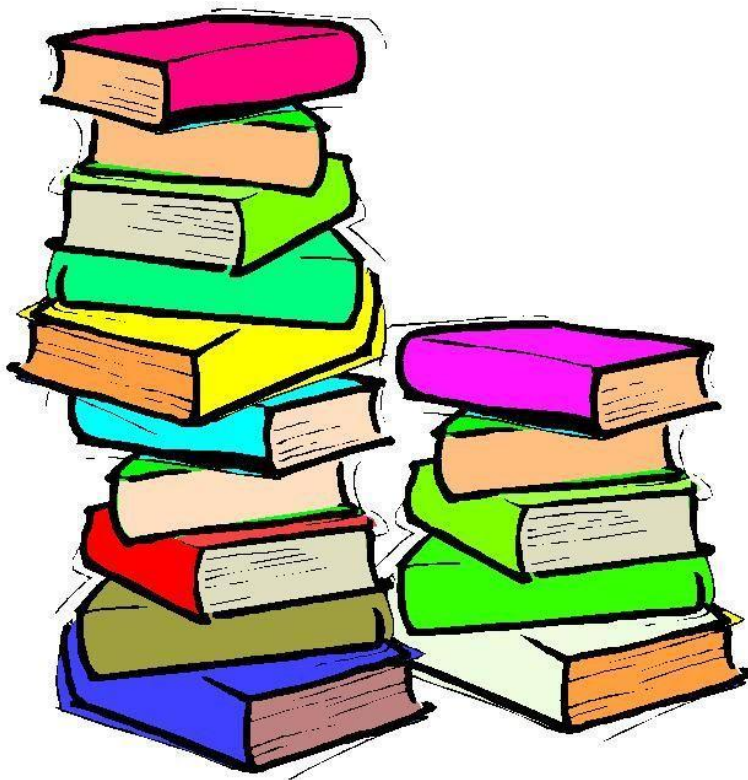


3 - odd



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Compare



Ryan's books Joe's books

How many more books does
Ryan have than Joe?

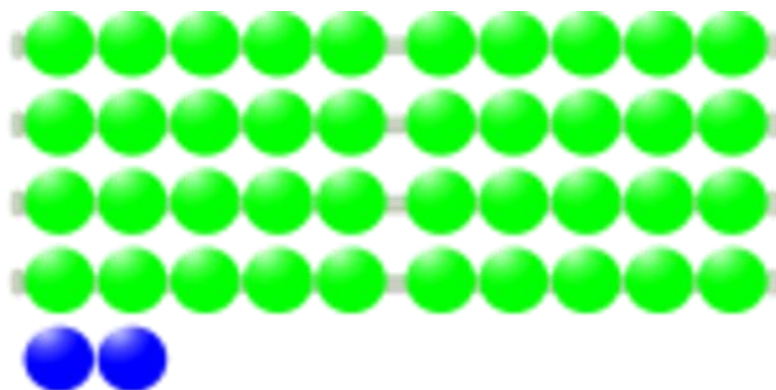
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More Than

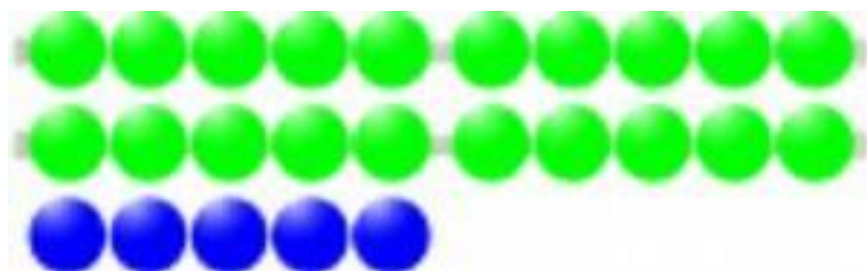


more  than 

Greater Than



42



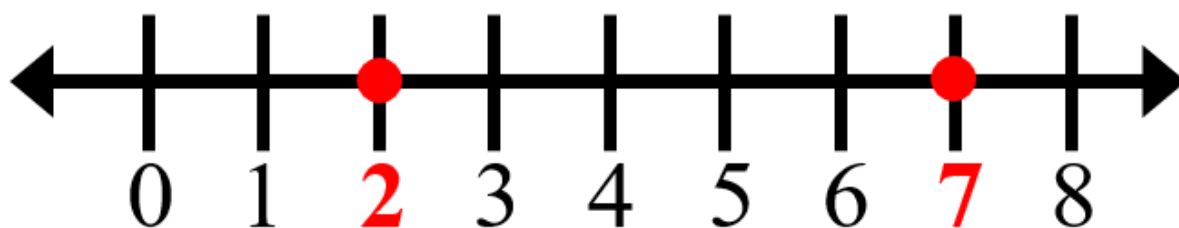
25

42 is greater than 25

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Greater Than

$>$



$$7 > 2$$

Fewer Than

Plate A



Plate B

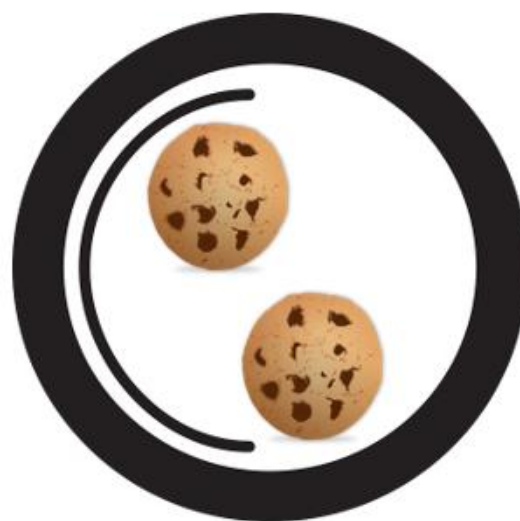


Plate B has **fewer** cookies **than**
Plate A

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Less Than



Less  than 

VAAP Version

Less Than



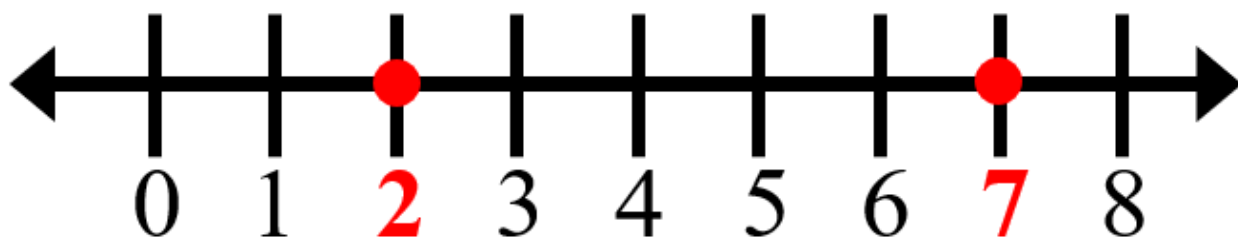
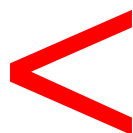
13 keys



20 keys

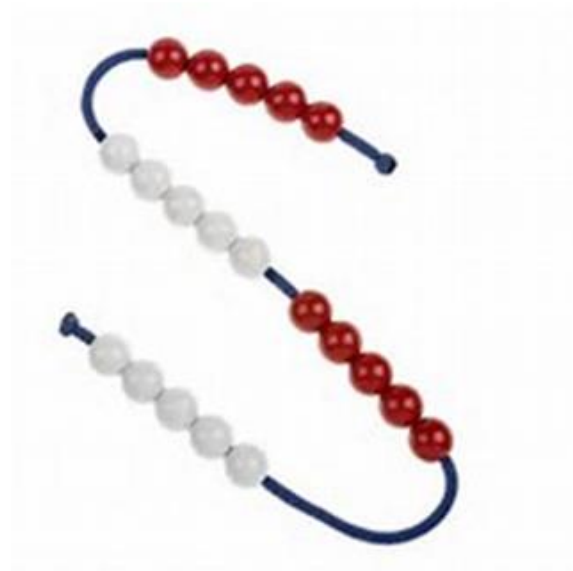
13 is less than 20

Less than



$$2 < 7$$

Equal To



20 beads



20 keys

20 is equal to 20

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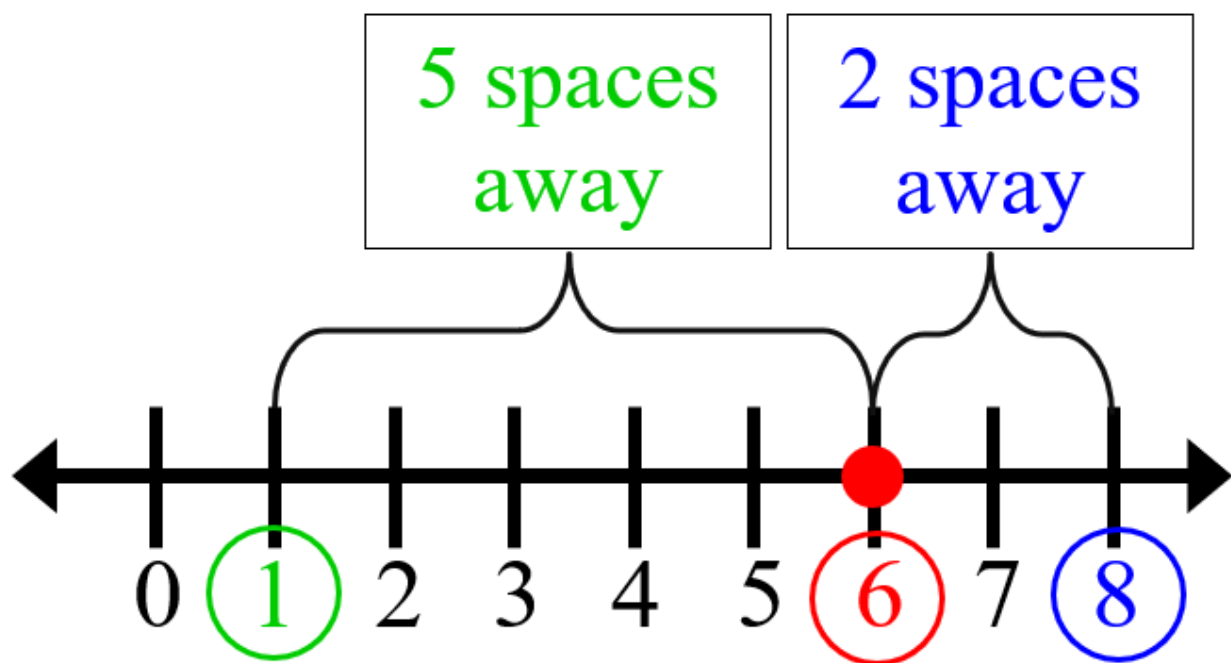
Equal to

=



$$4 = 4$$

Closest to



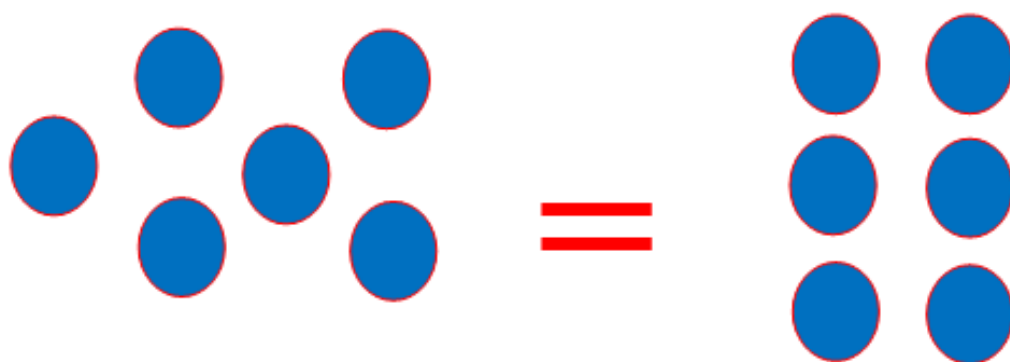
6 is closest to 8

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Computation And Estimation

Equal

has the same value



$$6 = 6$$

$$1 + 5 = 2 + 4$$

$$6 = 3 + 3$$

Equal

has the same value

=

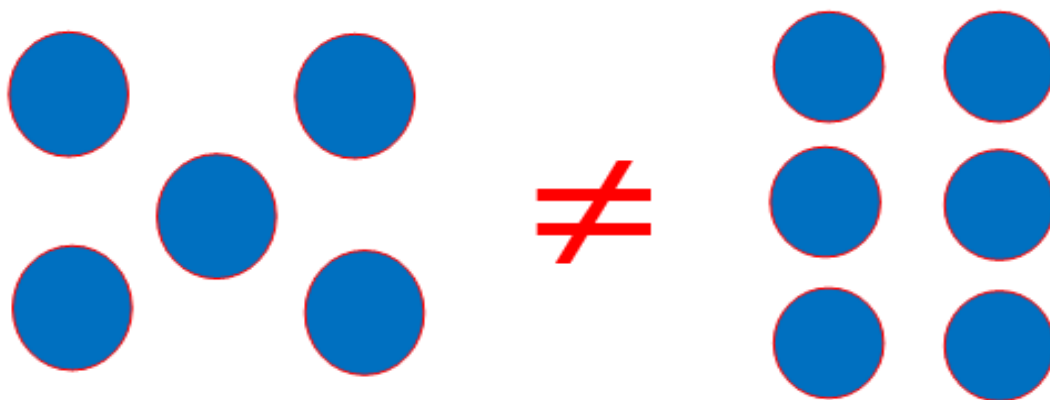
$$9 + 24 = 10 + 23$$

$$45 - 9 = 46 - 10$$



Not Equal

does not have the same value



$$5 \neq 6$$

$$5 + 2 \neq 1 + 5$$

$$4 + 3 \neq 8$$

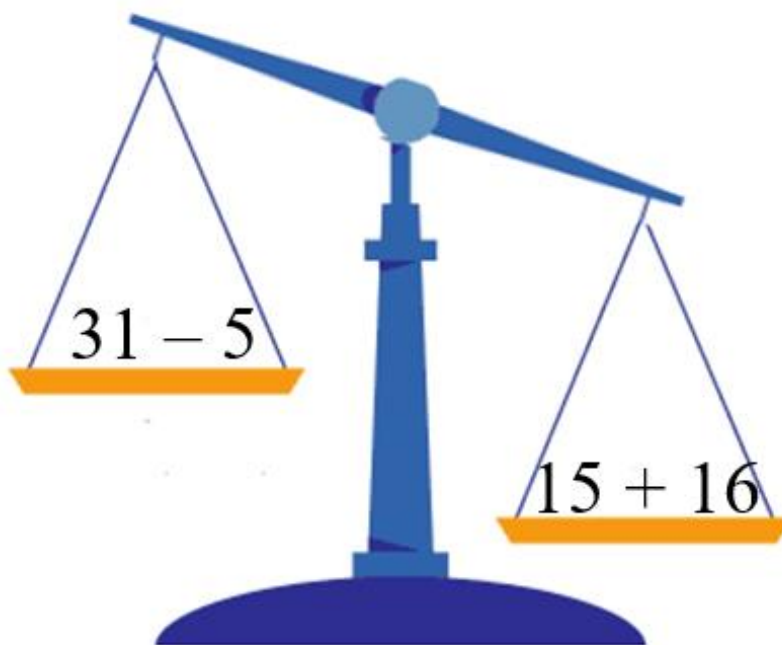
Not Equal

does not have the same value

\neq

$$15 + 16 \neq 31 + 15$$

$$14 + 3 \neq 8$$



Addition

(add)

3 dogs and 1 dog is
4 dogs



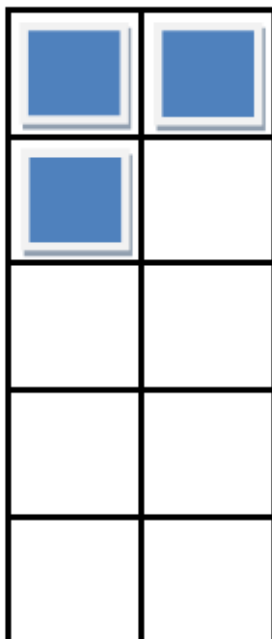
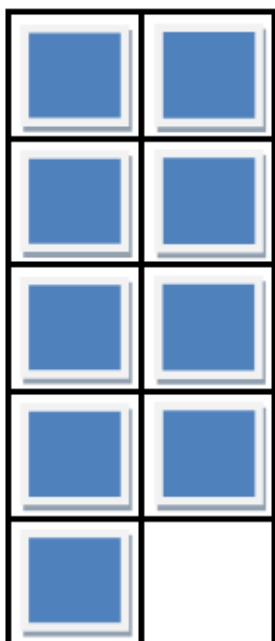
Addition

$$9 + 3 = 12$$

plus



sum



Join



How many girls and
boys are there?

Subtraction

(subtract)

6 cupcakes take away 2
cupcakes is 4 cupcakes

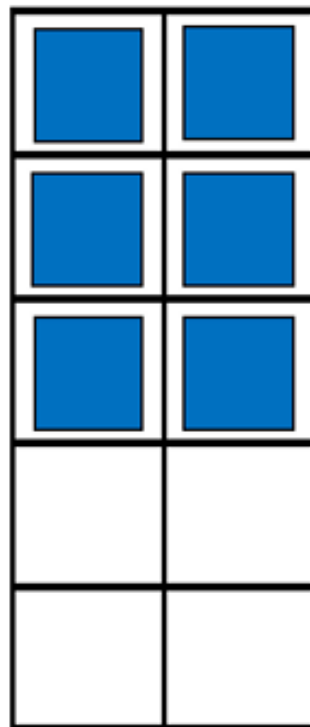
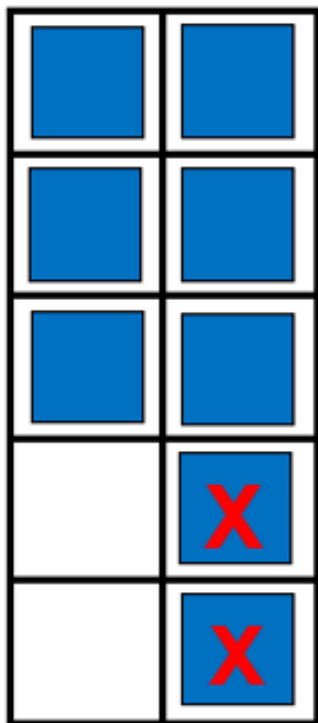


Subtraction

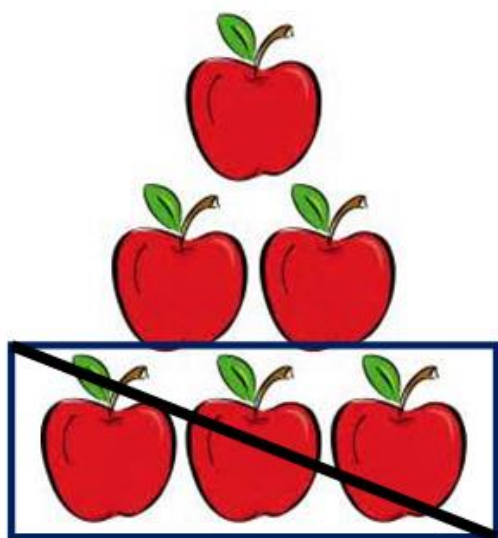
(subtract)

$$8 - 2 = 6$$

minus difference



Separate



6 apples

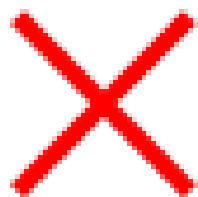
3 were eaten

How many are there
now?

Multiplication

$$3 \times 4 = 12$$

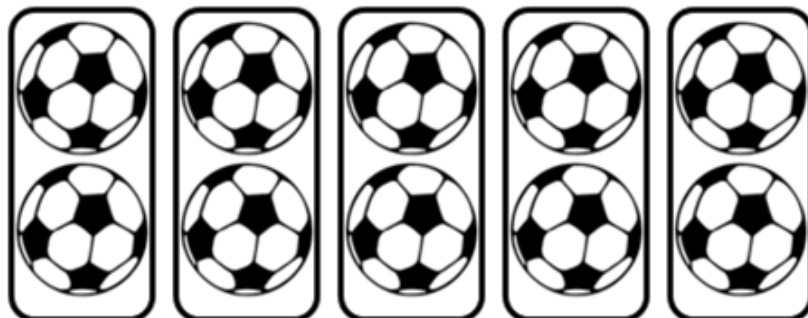
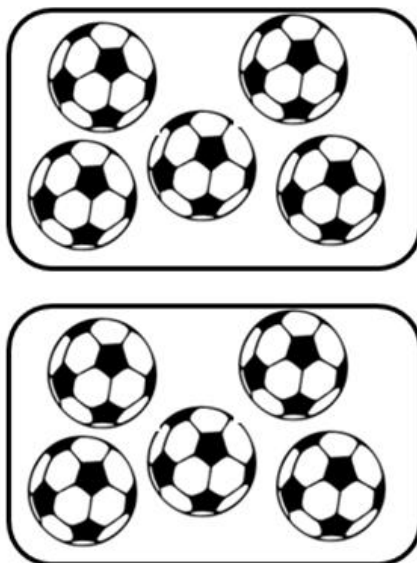
↑
product



Multiplication

$$2 \times 5$$

2 groups of 5
balls



$$5 \times 2$$

5 groups of 2
balls

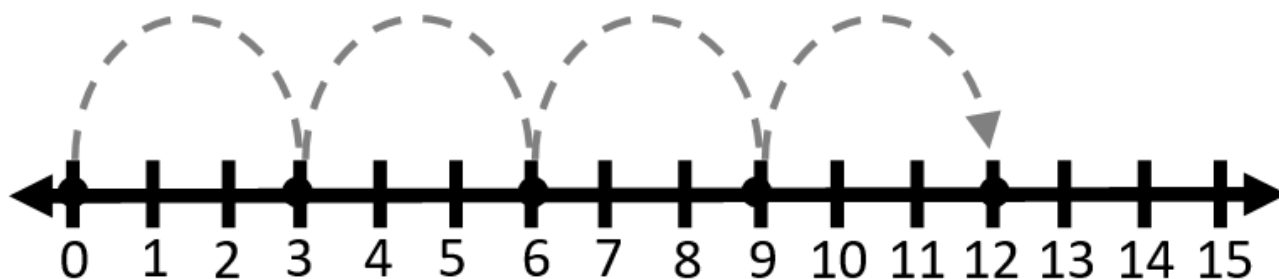
VAAP Version

Number Line



Number Line Model

$$4 \times 3 = 12$$

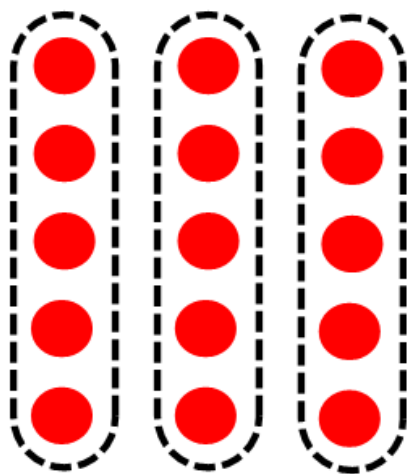
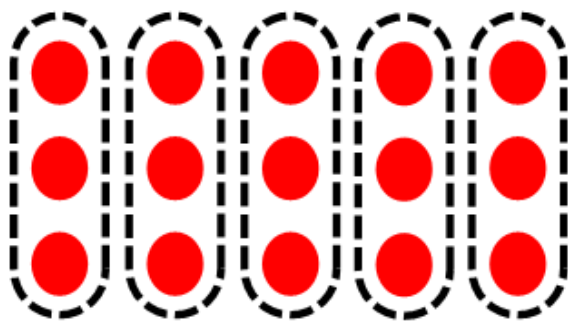


Division

15 pieces of candy shared with friends

$$15 \div 3$$

3 pieces of candy shared with 5 friends



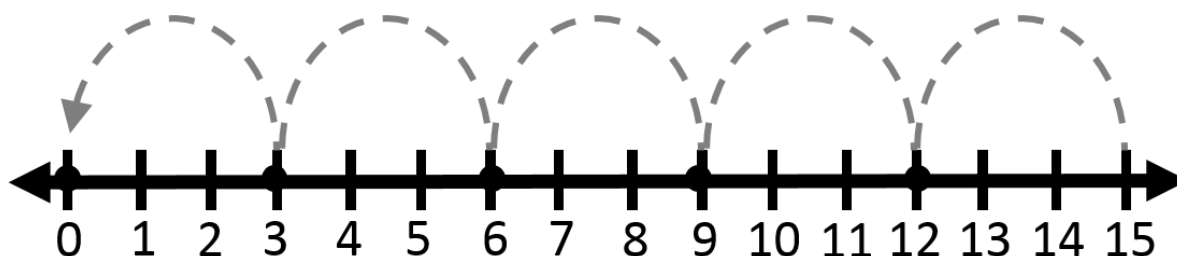
$$15 \div 5$$

5 pieces of candy shared with 3 friends

VAAP Version

Division

Number Line



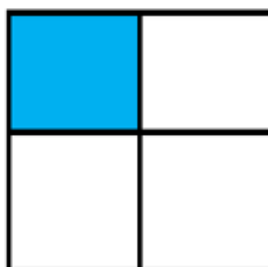
$$15 \div 3 = 5$$

Fraction Addition

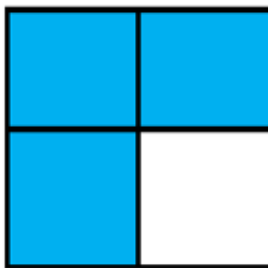
$$\frac{2}{4}$$



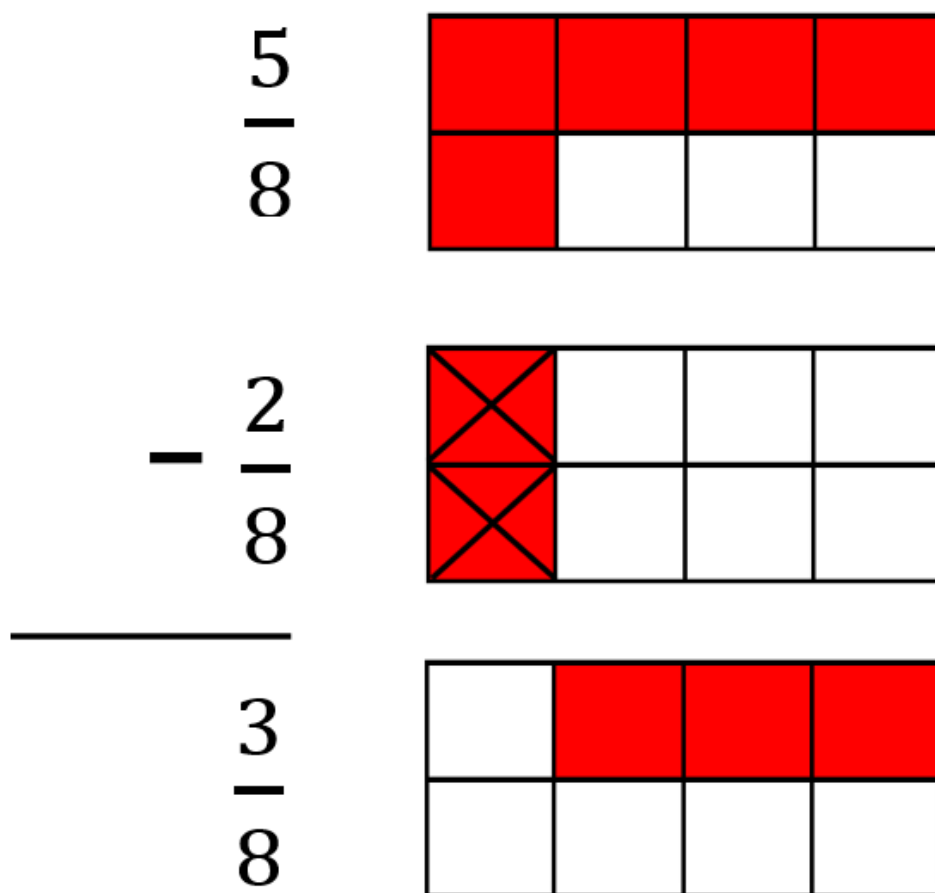
$$+ \frac{1}{4}$$



$$\frac{3}{4}$$



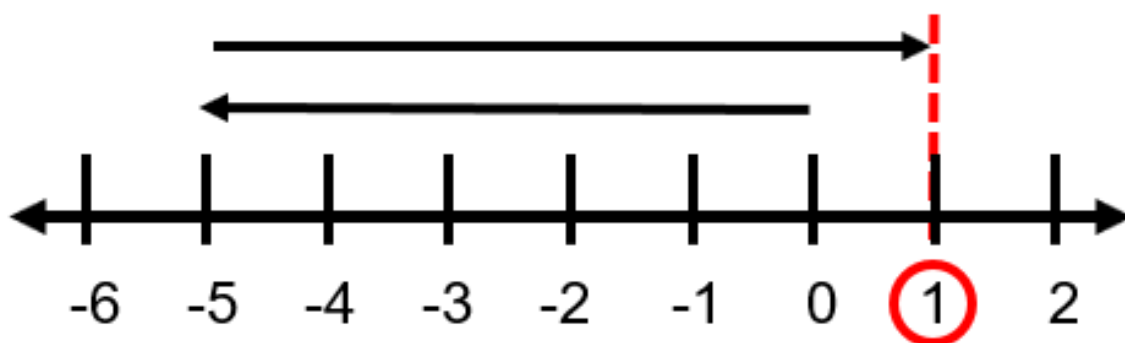
Fraction Subtraction



Integer Operations

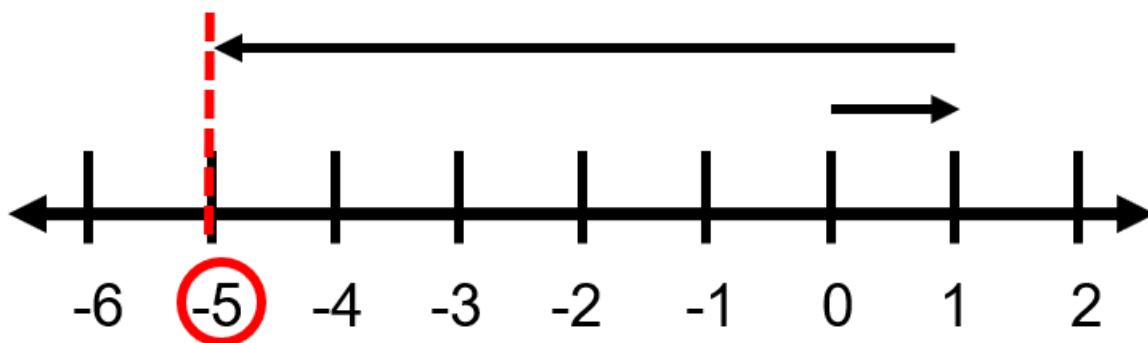
Addition

$$-5 + 6 = 1$$



Subtraction

$$1 - 6 = -5$$



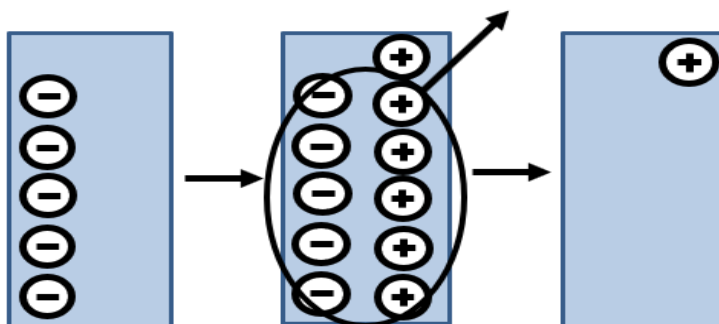
Integer Operations

Key:

\oplus = positive 1 \ominus = negative 1 $\ominus \oplus$ = 0 pair

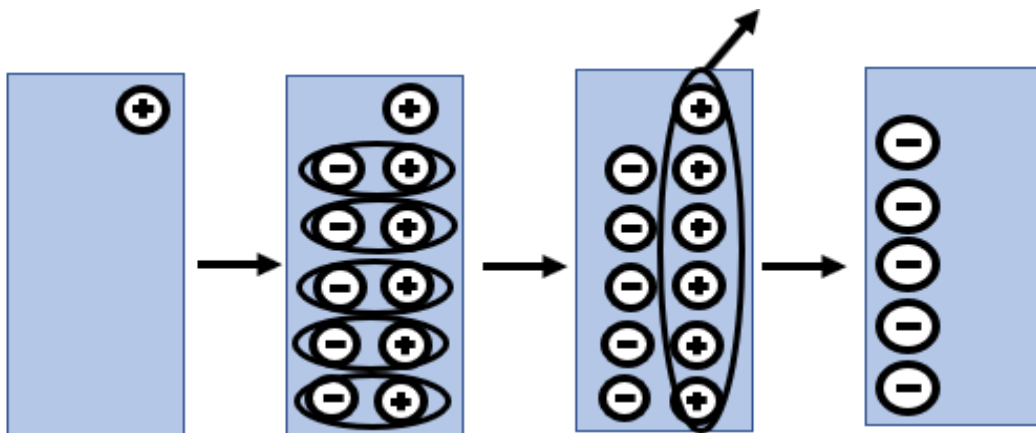
Addition

$$-5 + 6 = 1$$



Subtraction

$$1 - 6 = -5$$





Integer Operations

Multiplication

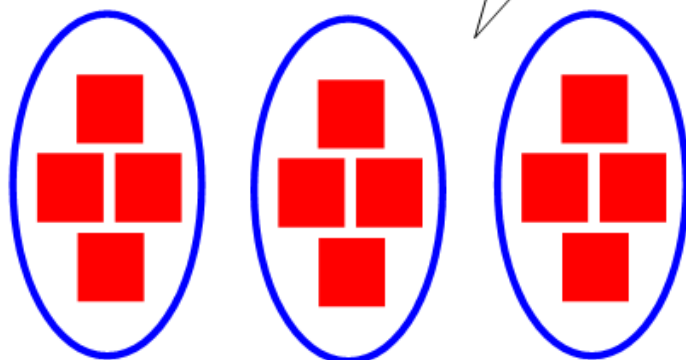
$$3 \cdot (-4) = -12$$

Key

 = +1

 = -1

How many tiles are in 3 groups of -4 tiles?



Integer Operations

Multiplication

$$3 \cdot (-4) = -12$$

Key

- = +1
- = -1

How many tiles are in 3 groups of -4 tiles?

Division

$$-12 \div -4 = 3$$

Key

- = +1
- = -1

How many groups of -4 tiles are in -12 tiles?

VAAP Version

Measurement

Penny



1¢

one cent

VAAP Version

Nickel



5¢

five cents

VAAP Version

Nickel



one nickel equals five pennies



5¢

5 cents

VAAP Version

Dime



10¢

ten cents

Dime



one dime equals ten pennies



10¢

10 cents

VAAP Version

Quarter



25¢

twenty-five
cents

VAAP Version

Quarter



one quarter equals twenty-five pennies



25¢
25 cents

VAAP Version

Dollar



\$1.00

one hundred cents

VAAP Version

Clock

time

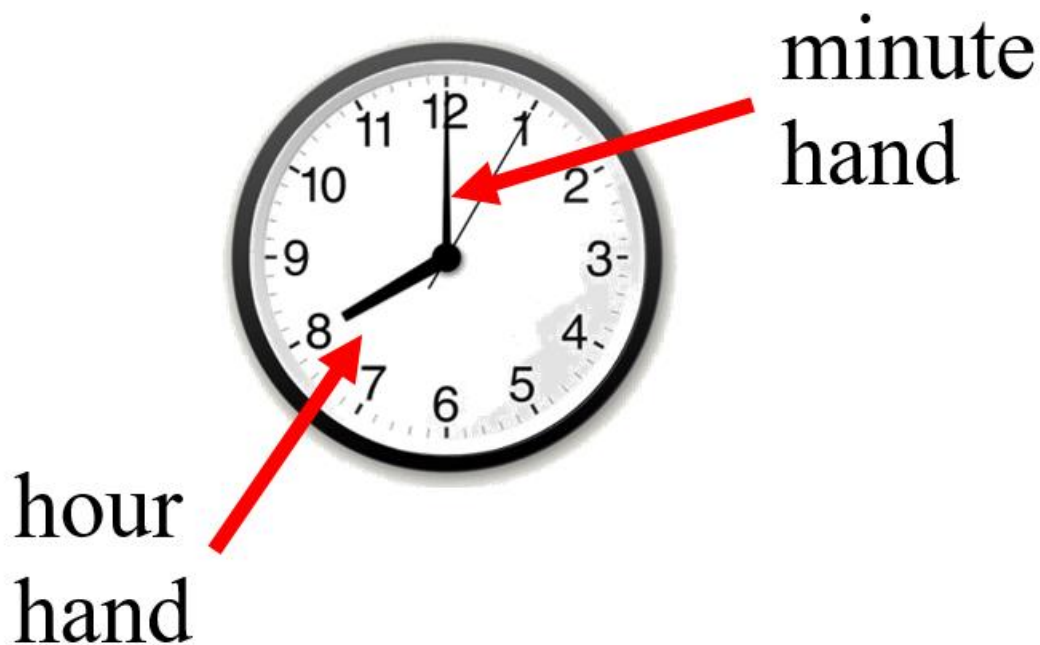


digital

VAAP Version

Clock

time



analog

VAAP Version

Clock

time



digital



analog

Clock

minutes, one-half Hour,
one Hour



digital



analog

30 minutes = one-half hour

60 minutes = 1 hour

24 hours = 1 day

VAAP Version

Midnight



VAAP Version

Noon



VAAP Version

AM



midnight to noon

12:00am → 12:00pm

VAAP Version

PM

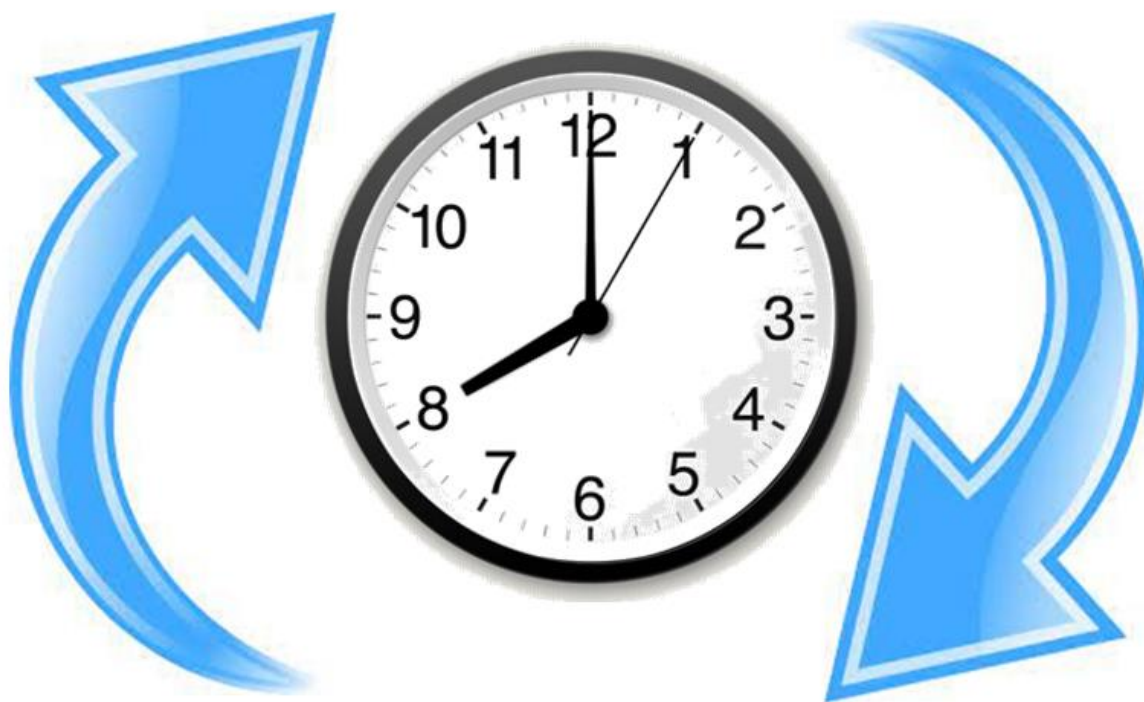


noon to midnight

12:00pm → 12:00am

VAAP Version

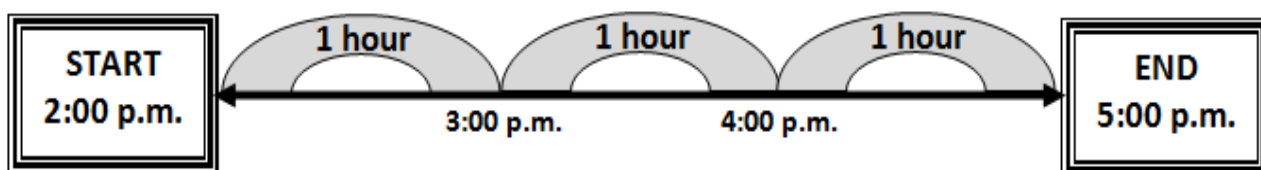
Clockwise



Elapsed Time

amount of time that has passed between two given times

The movie starts at 2:00 p.m.
and ends at 5:00 p.m.



The movie is three hours long.

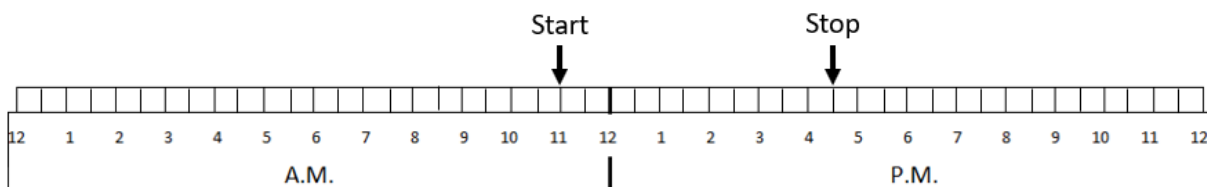
Elapsed Time

amount of time that has passed between two given times

START



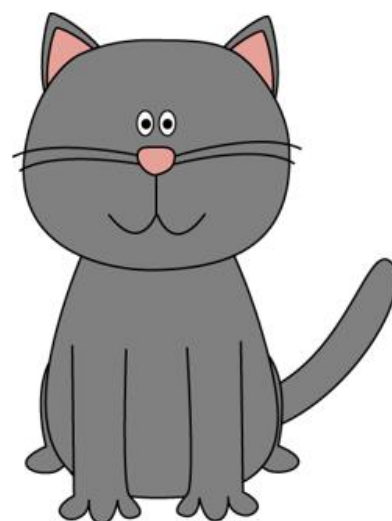
STOP



Weight

heavier/lighter

heavier



lighter



Length

longer/shorter



longer



shorter

longer



shorter



VAAP Version

Height

taller/shorter



taller



shorter

Temperature

hotter/colder



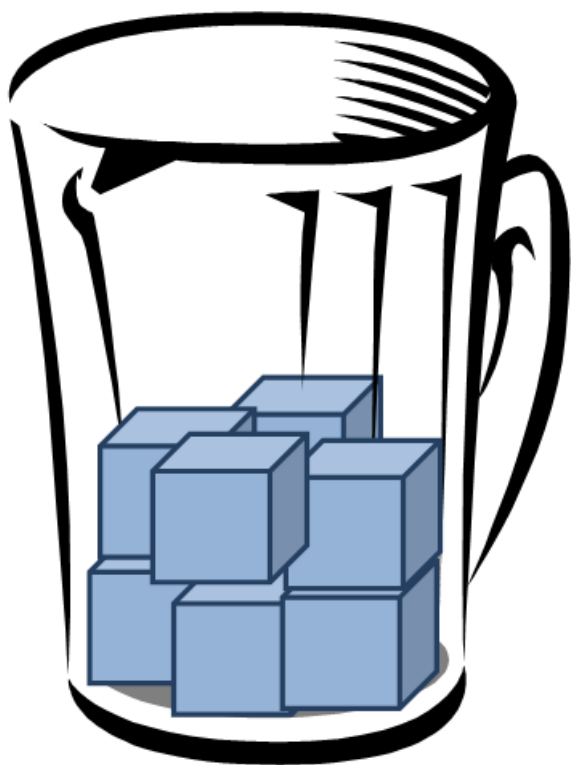
colder



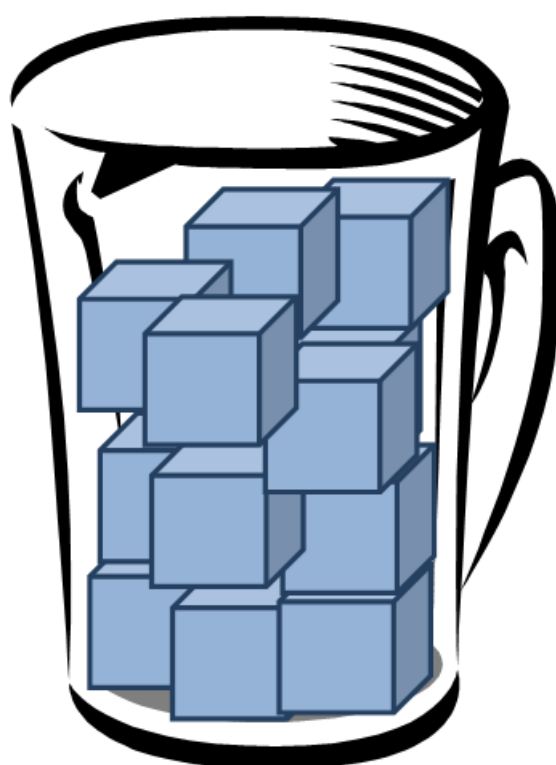
VAAP Version

Volume

less / more



less

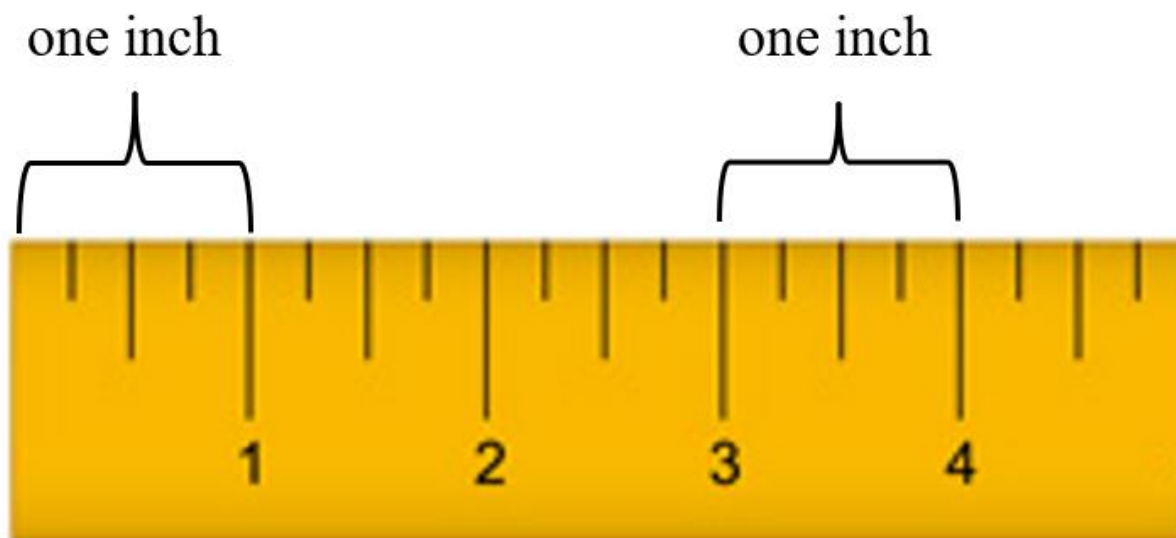


more

VAAP Version

Ruler

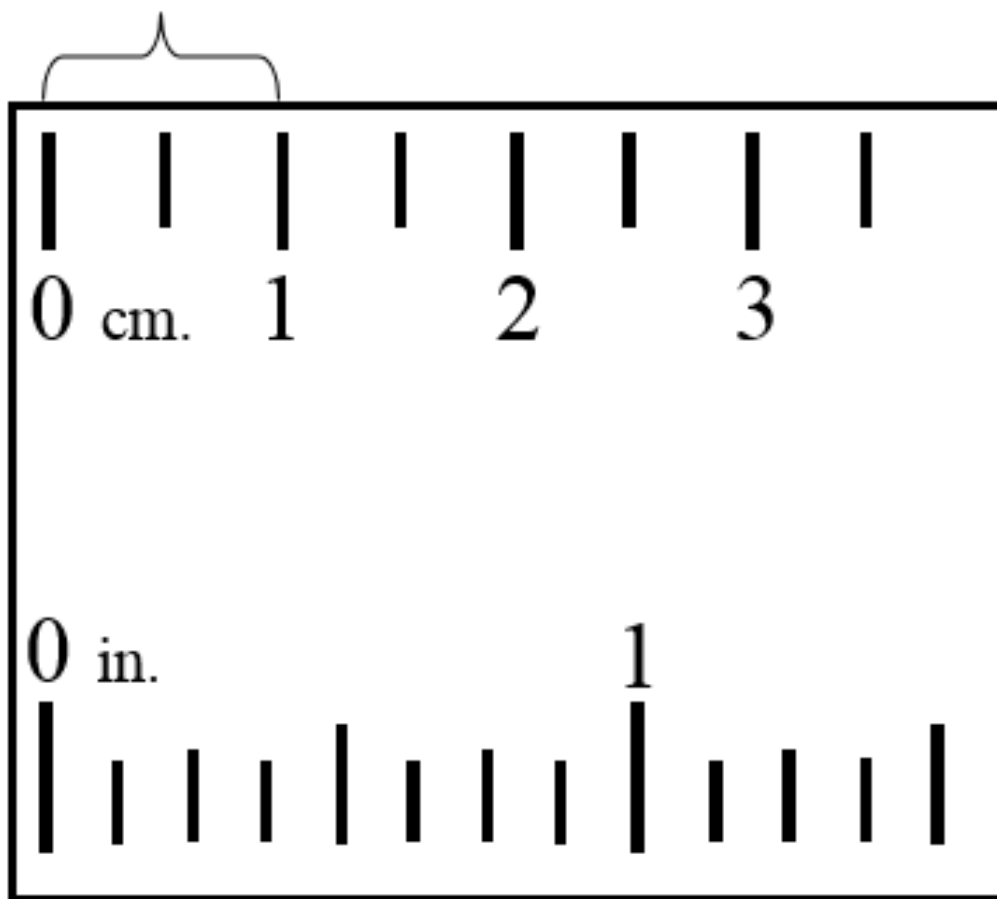
1 inch



Ruler

centimeter/inch

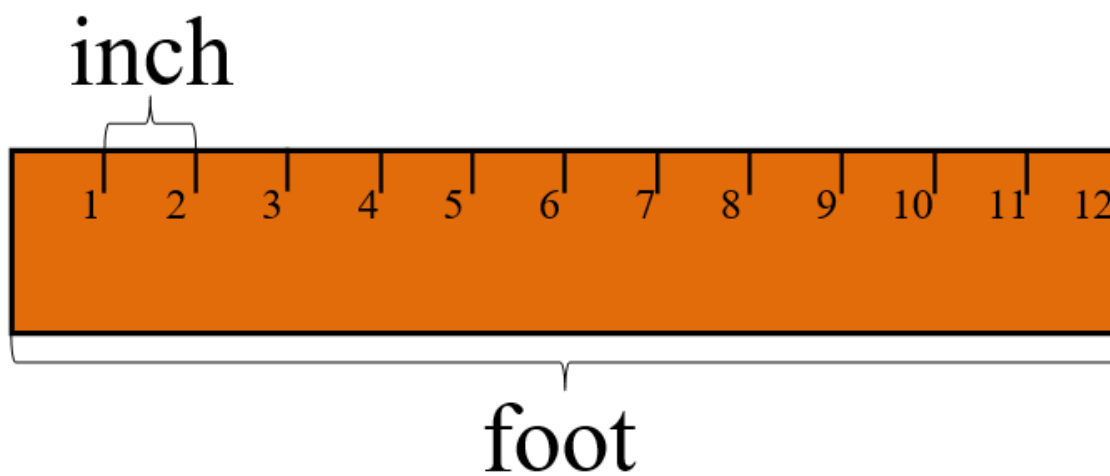
one centimeter



VAAP Version

Ruler

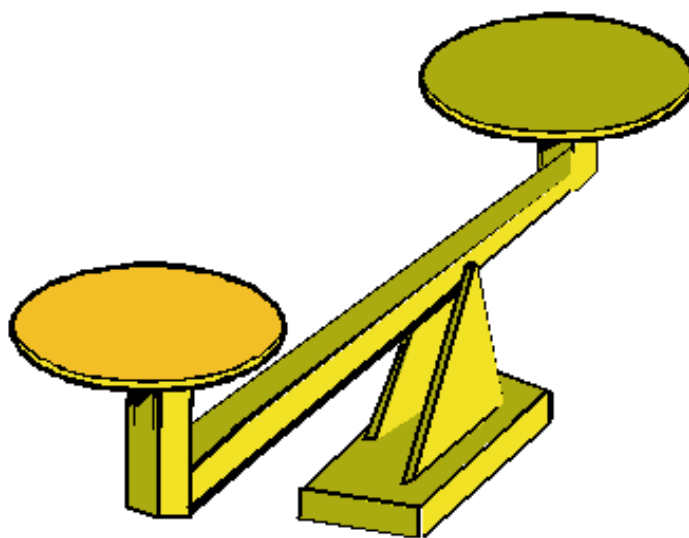
inch/foot



VAAP Version

Balance Scale

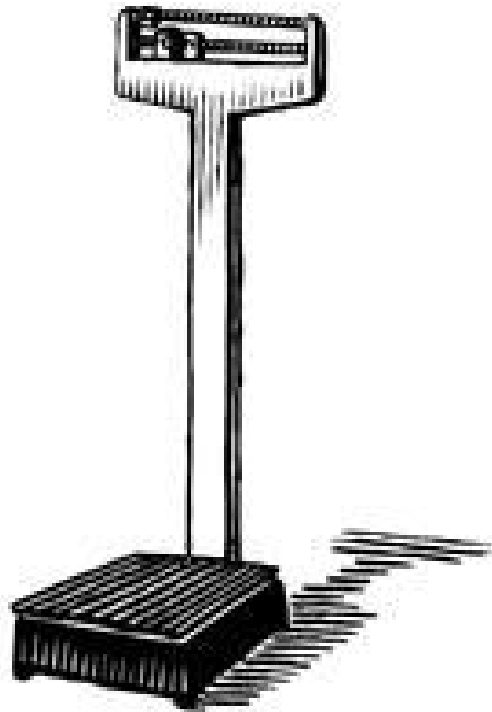
weight/mass



VAAP Version

Scale

weight/mass



Pound (lb)

weight



about
1 lb



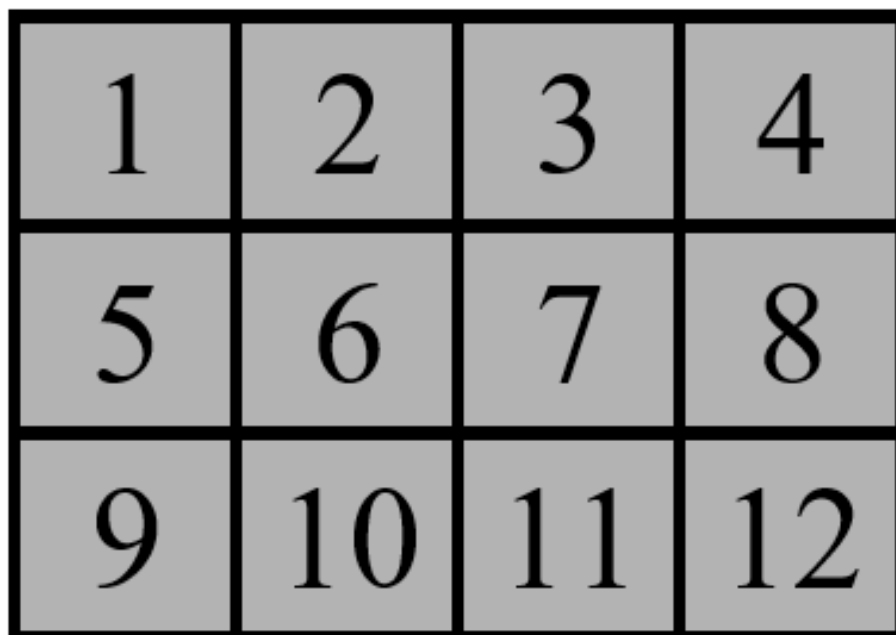
about
10 lbs



about
20 lbs

Area

square units



12 square units

Area

square units

1	2	3	4
5	6	7	8
9	10	11	12

length x width

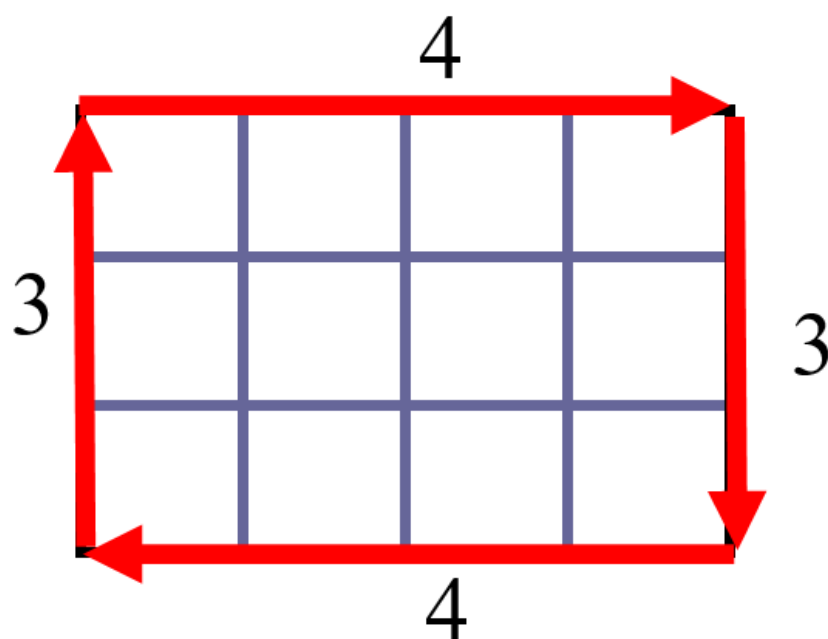
$$3 \times 4 = 12$$

12 square units

VAAP Version

Perimeter

units



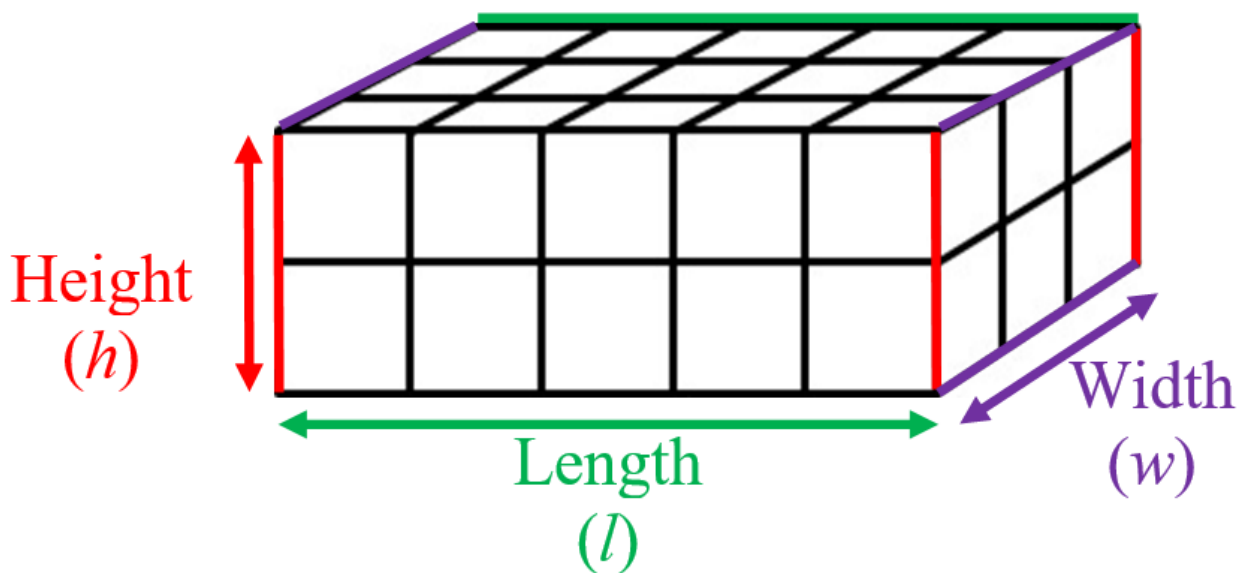
$$3 + 4 + 3 + 4$$

14 units

Volume

length, width, height

$$V = lwh$$



$$l \times w \times h$$

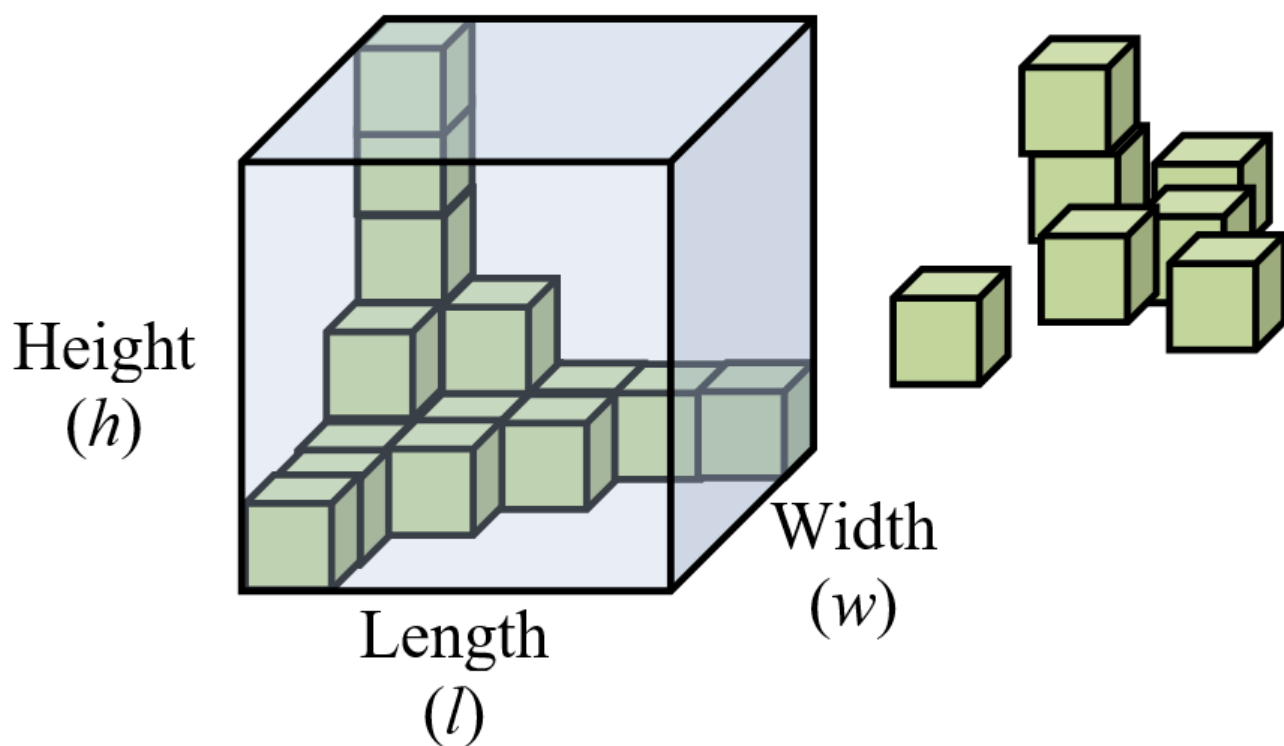
$$5 \times 3 \times 2$$

volume = 30 cubic units

Volume

area of the base times the height

$$V=Bh$$



$$B \times h$$

$$25 \times 5$$

$$\text{Volume} = 125 \text{ cubic units}$$

VAAP Version

Geometry

VAAP Version

Point

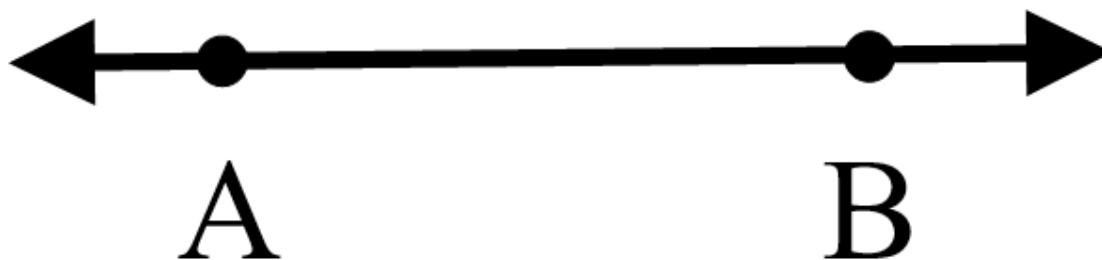


VAAP Version

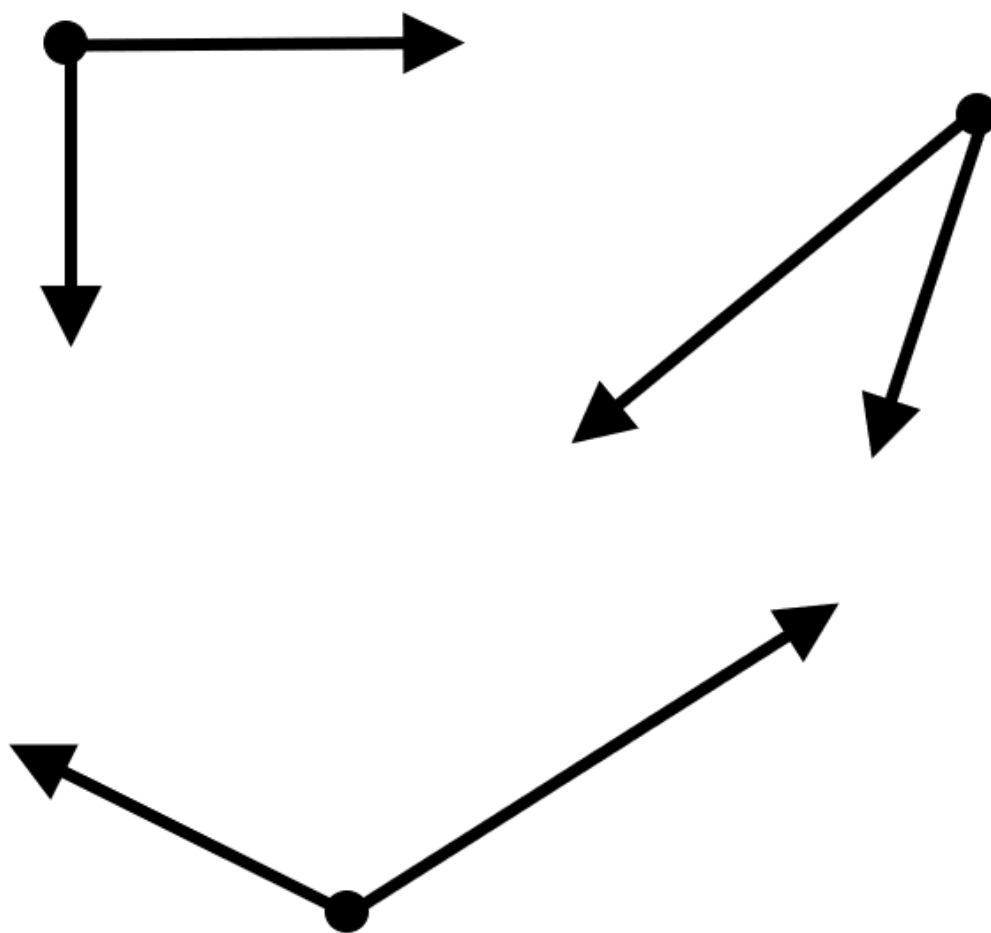
Line Segment



Line

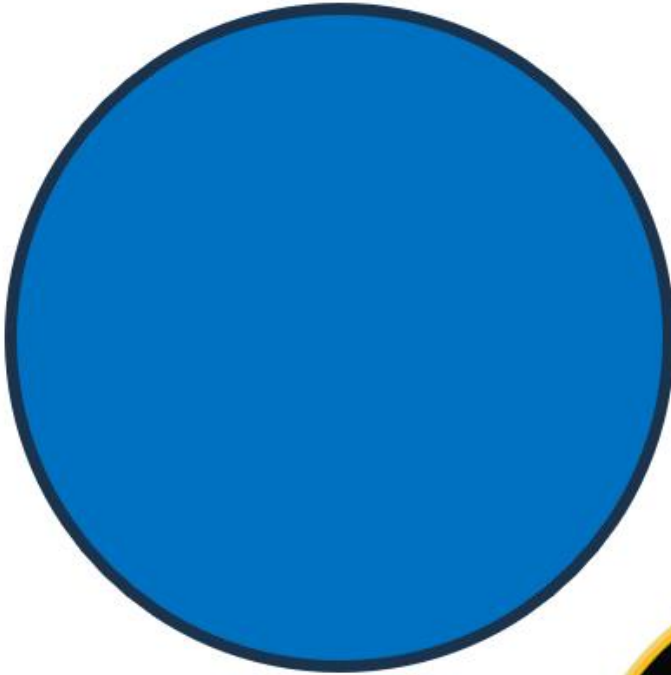


Angle



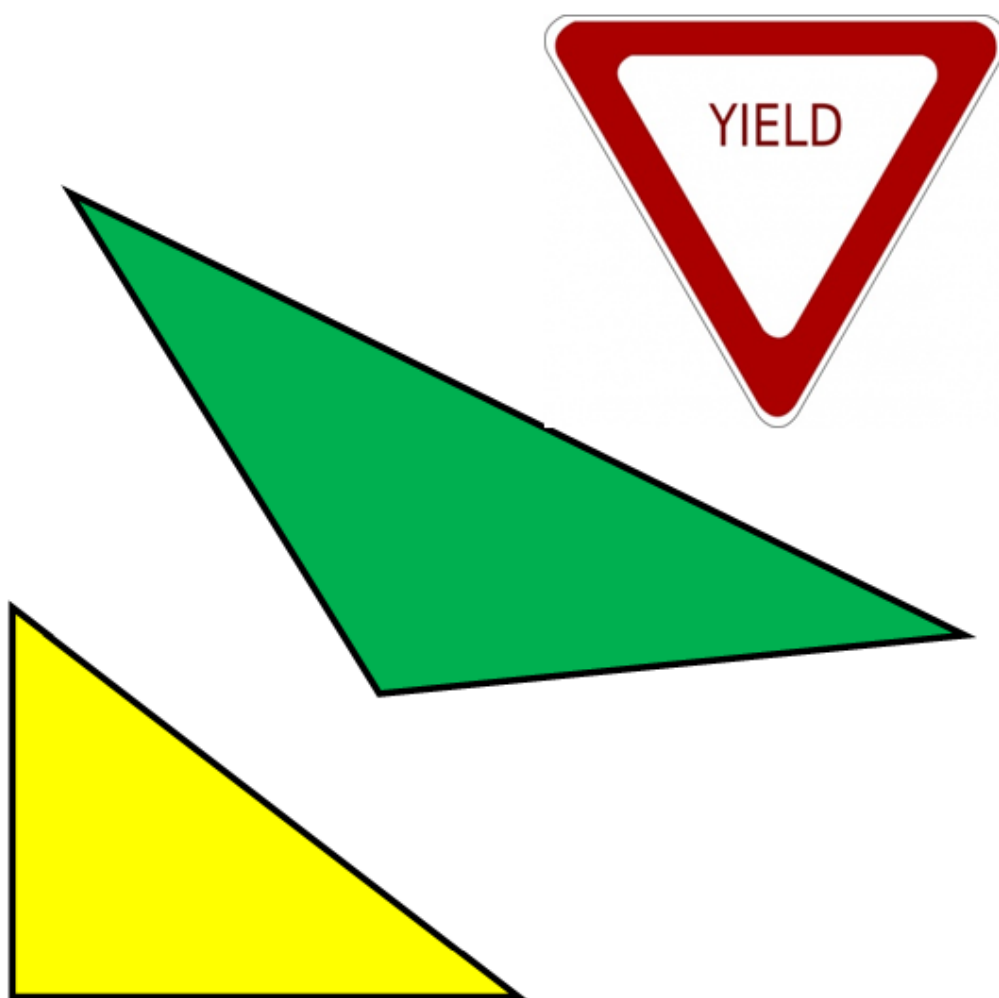
VAAP Version

Circle



VAAP Version

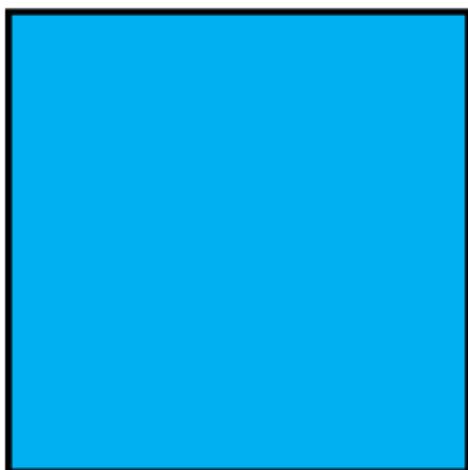
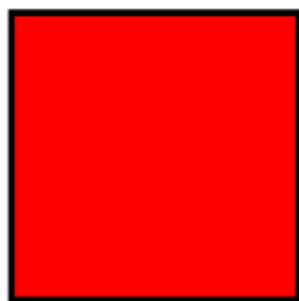
Triangle



three-sided figure

VAAP Version

Square



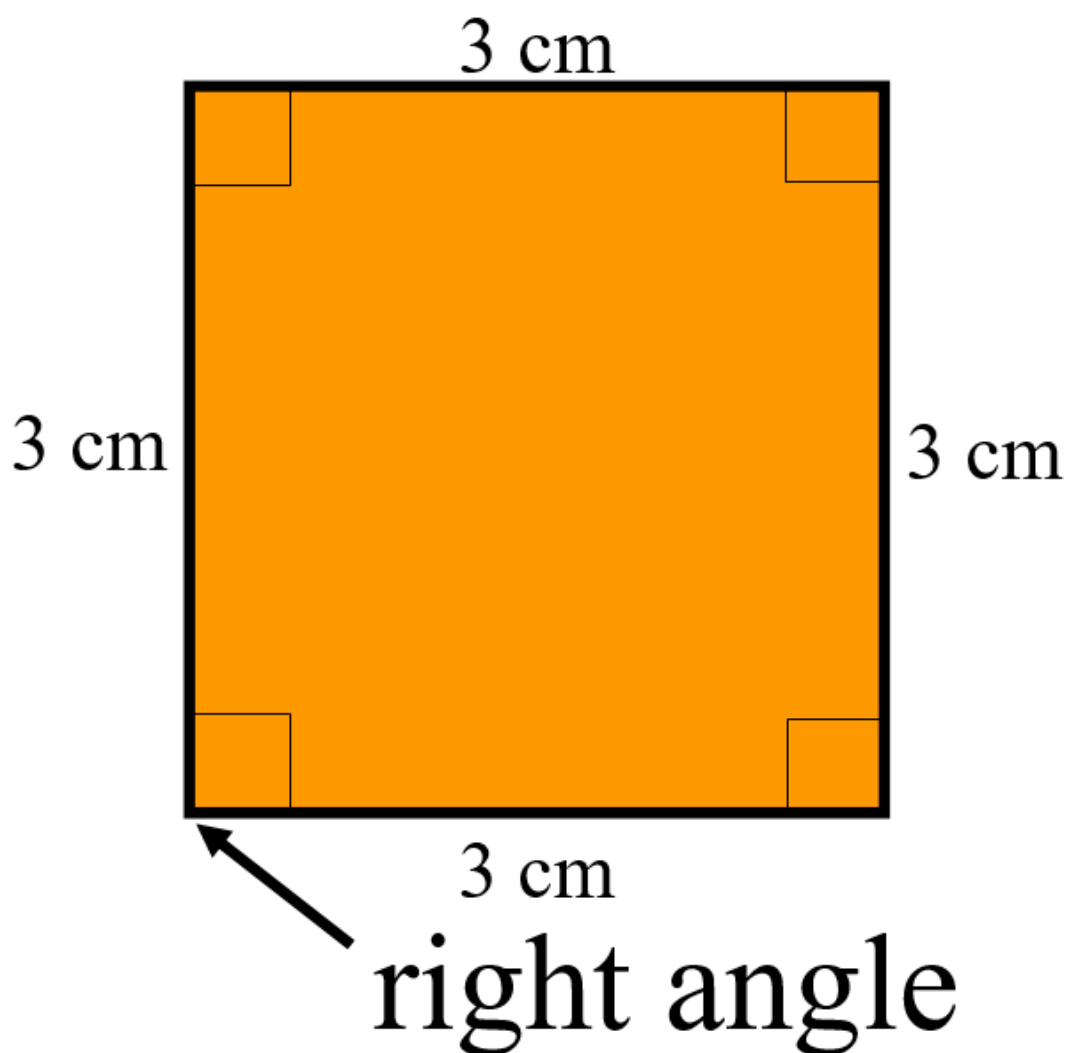
four-sided figure

VAAP Version

Square

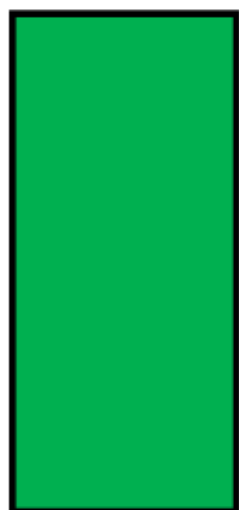
all angles are right angles

all sides are congruent



VAAP Version

Rectangle

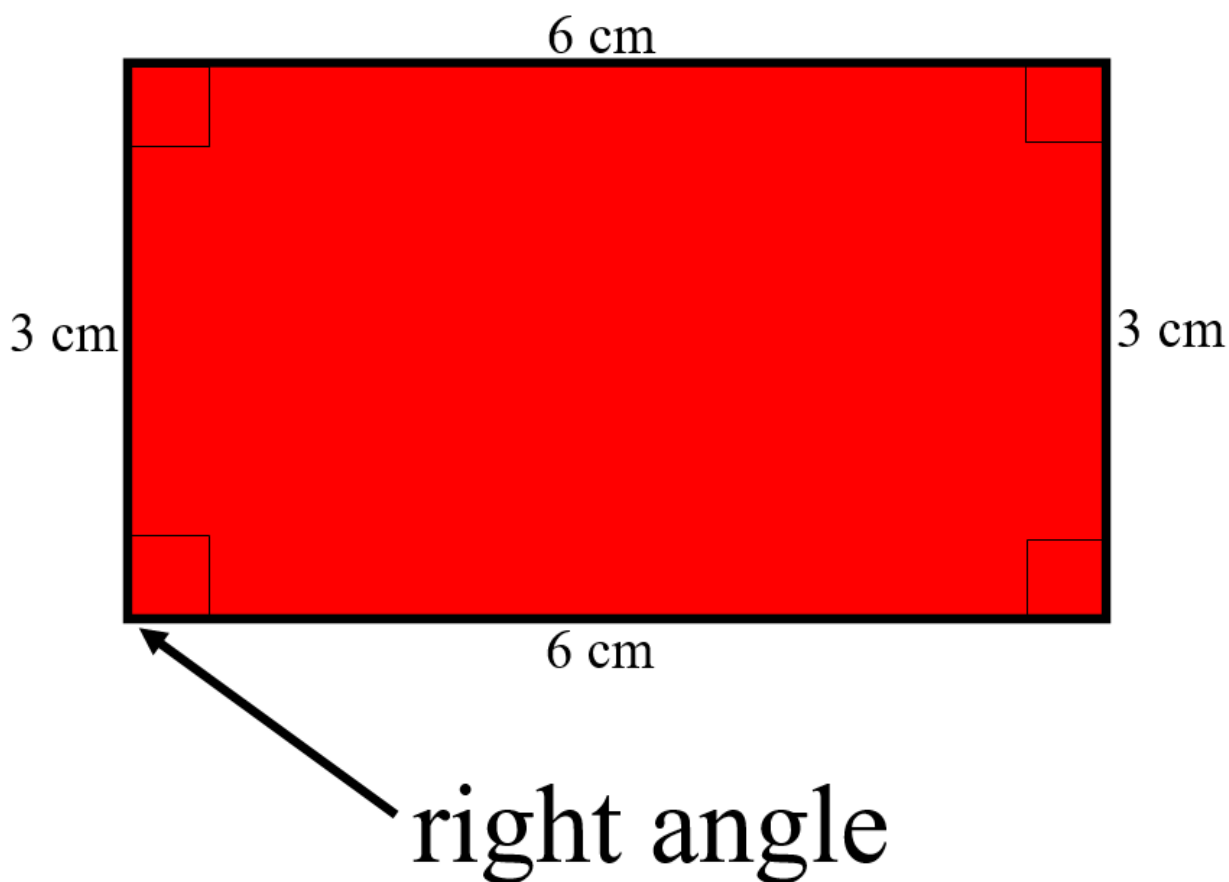


four-sided figure

VAAP Version

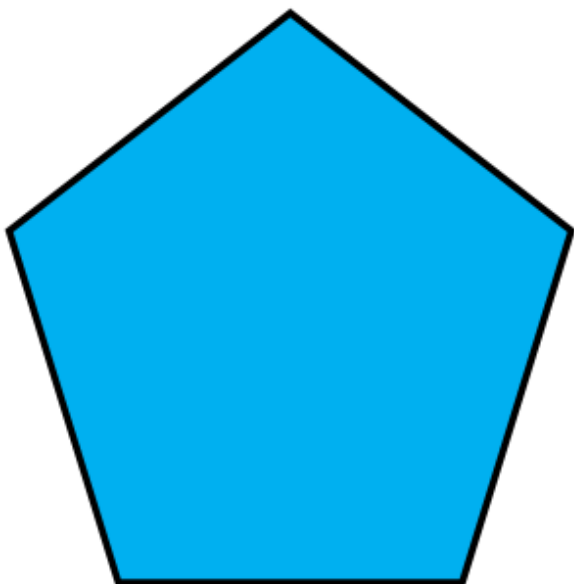
Rectangle

all angles are right angles
opposite sides are congruent



VAAP Version

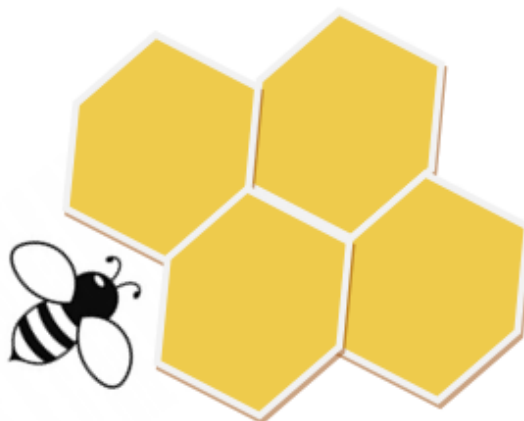
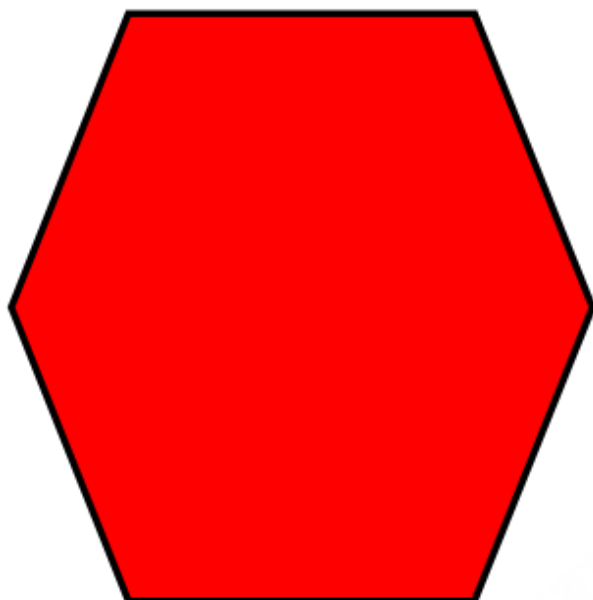
Pentagon



five-sided figure

VAAP Version

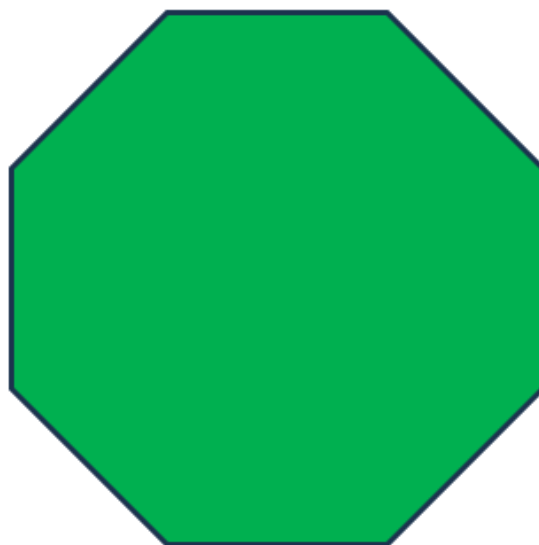
Hexagon



six-sided figure

VAAP Version

Octagon

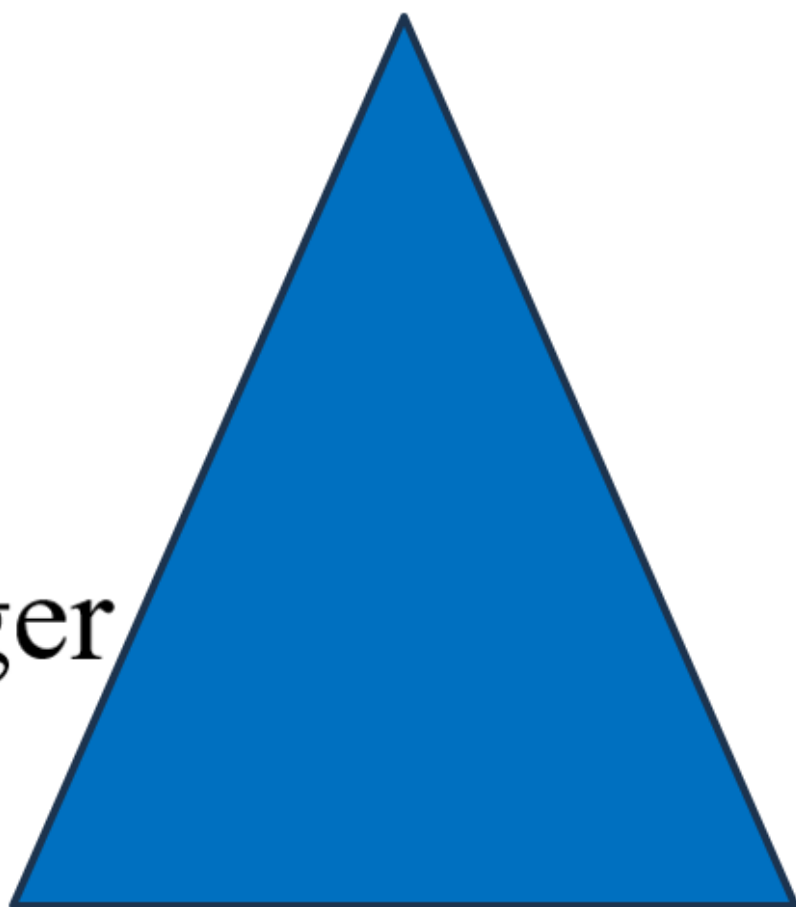


eight-sided figure

Smaller/Larger

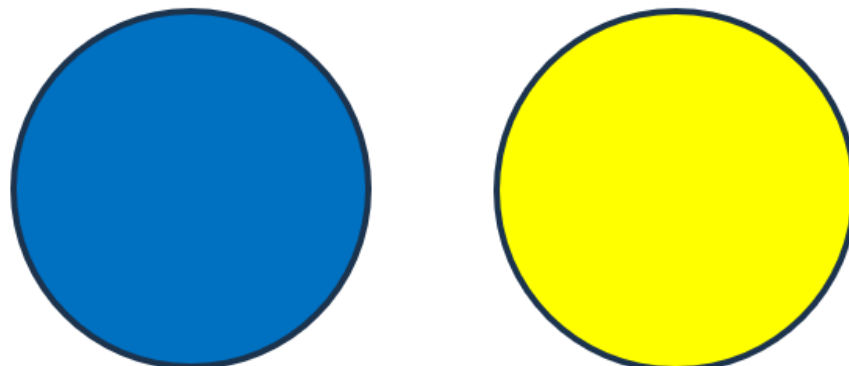


smaller



larger

Same



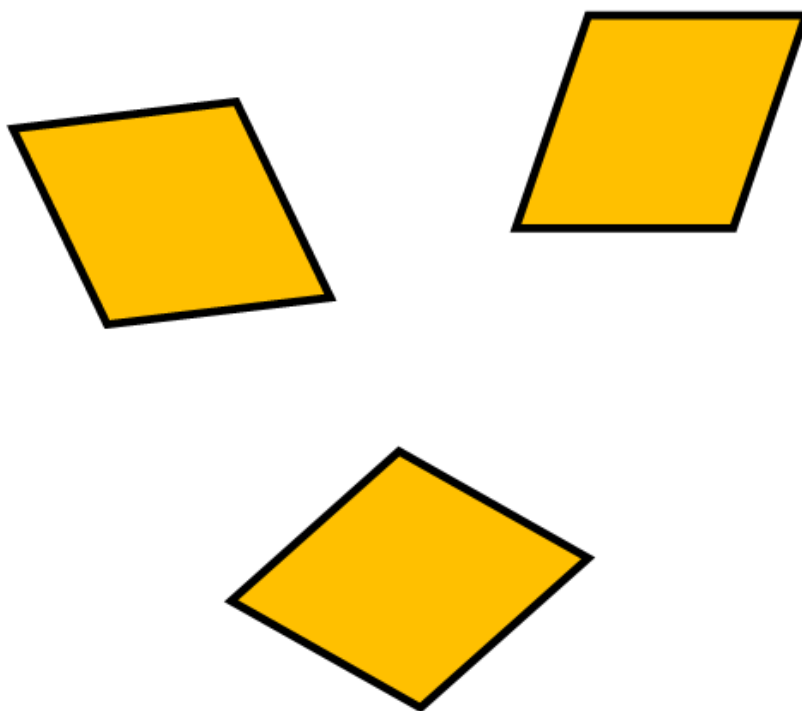
same shape



same color

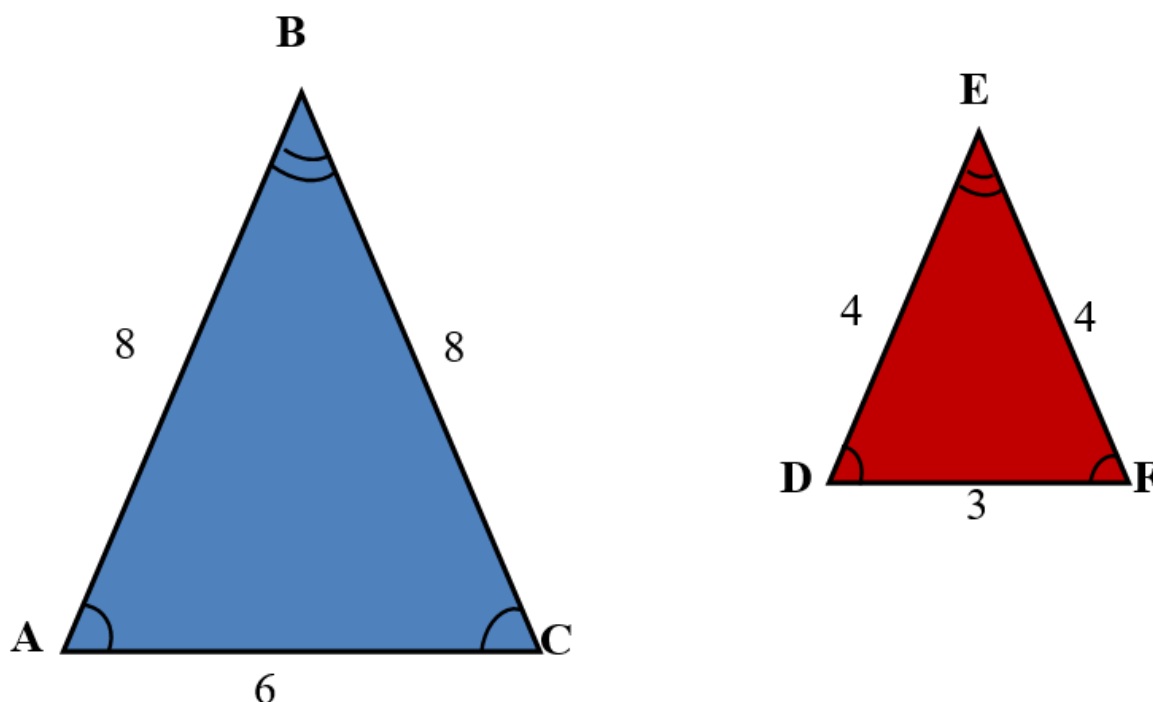
VAAP Version

Congruent



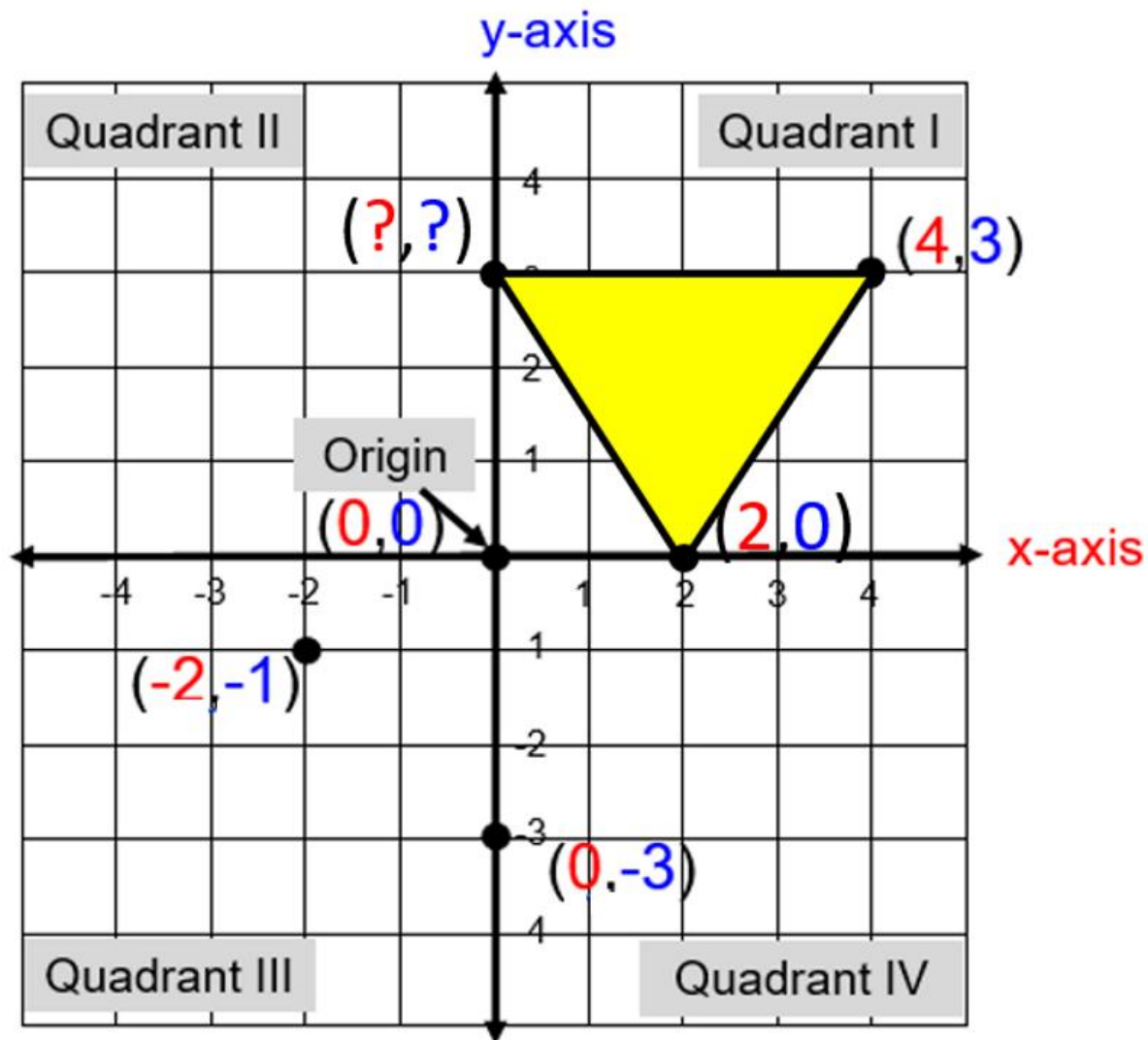
same shape and size

Similar Figures



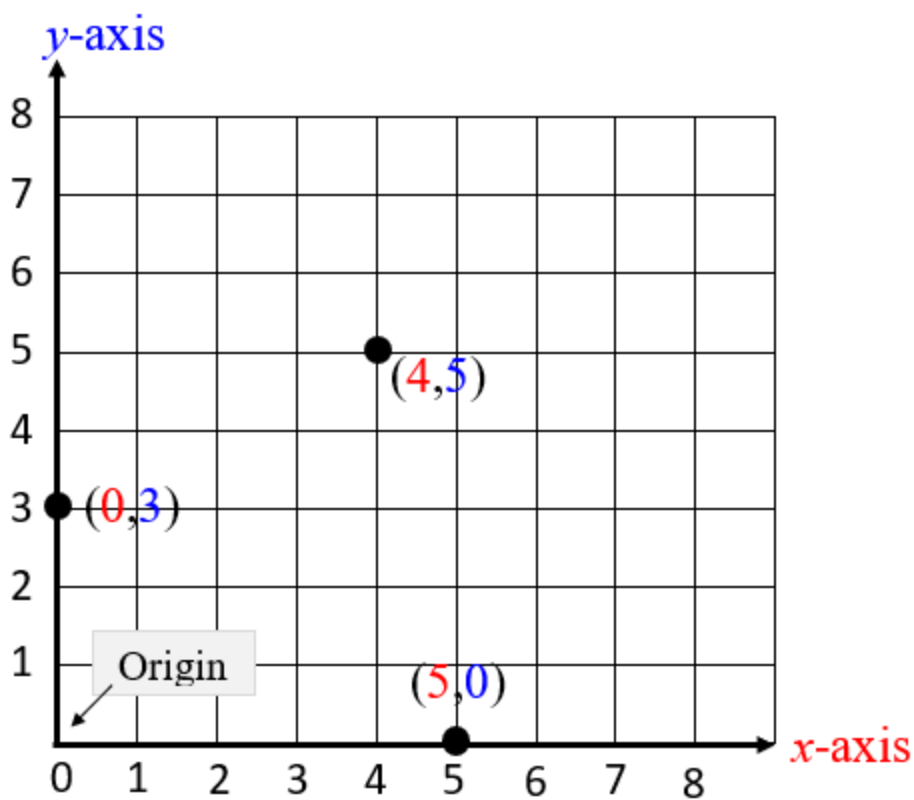
$\triangle ABC$
is similar to
 $\triangle DEF$

Coordinate Plane



ordered pair (x,y)

Coordinate Plane (Quadrant I Only)

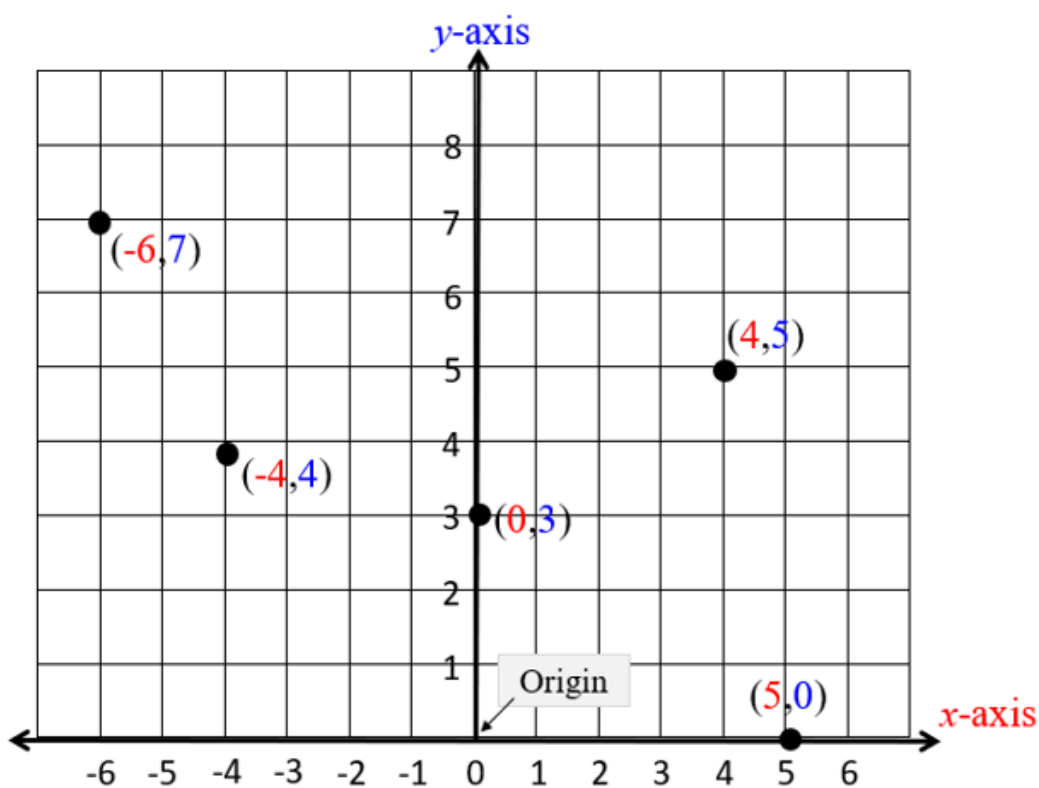


ordered pair (x, y)

VAAP Version

Coordinate Plane

(Quadrant I & II Only)



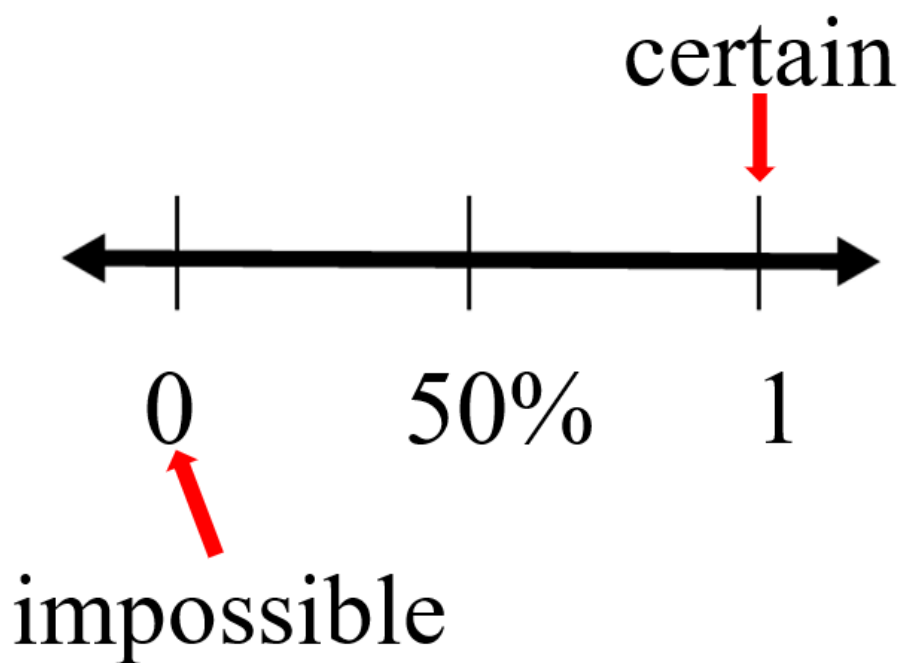
ordered pair (x, y)

VAAP Version

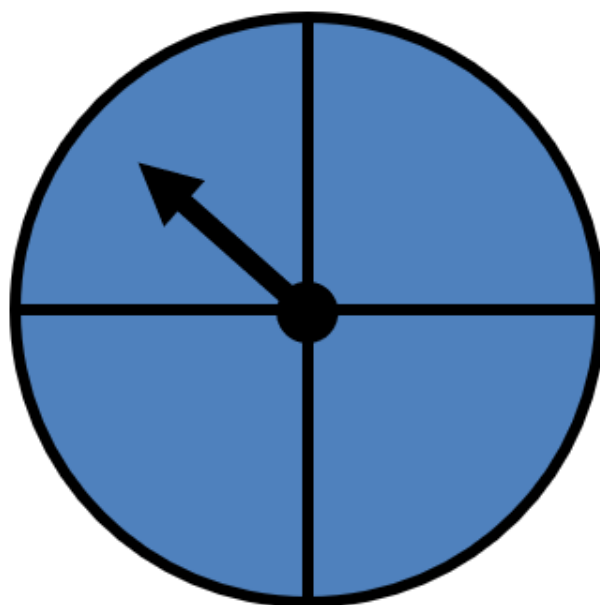
Probability and Statistics


VAAP Version

Probability Number Line

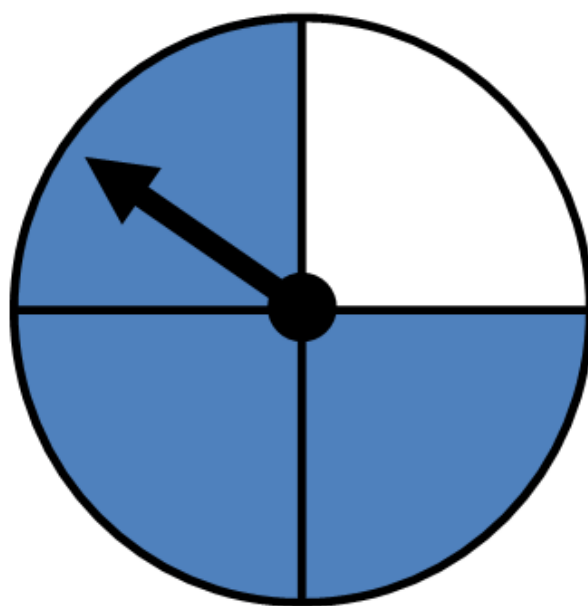


Certain



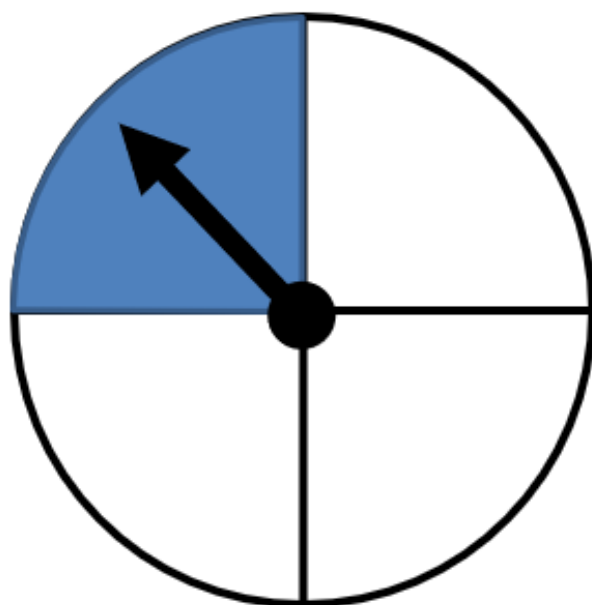
 is certain
100% probability

Likely



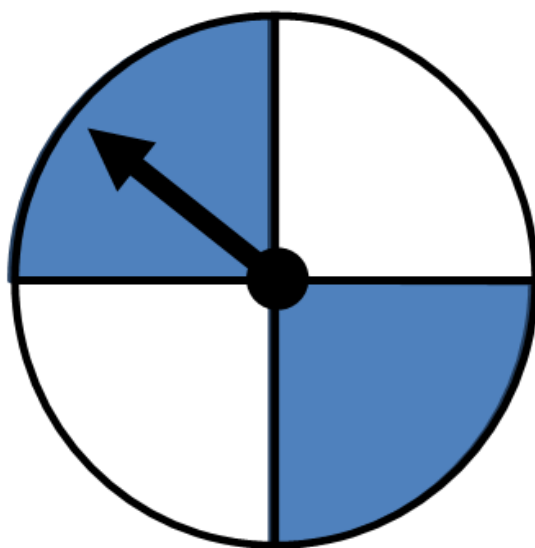
■ is likely
75% probability

Unlikely



■ is unlikely
25% probability

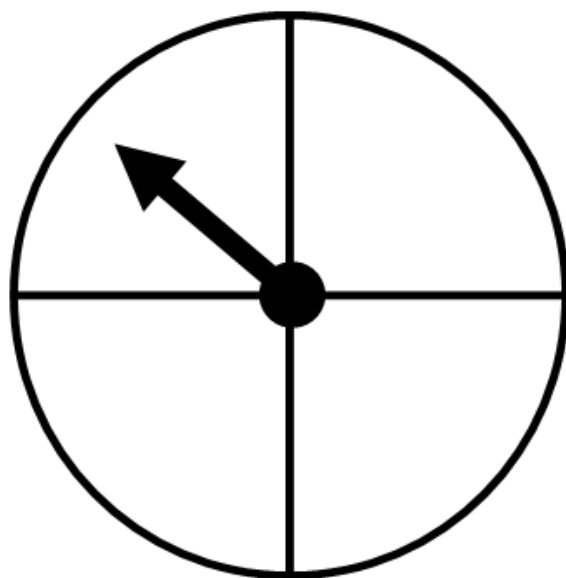
Equally likely



■ and □ are equally
likely

50% probability

Impossible



■ is impossible

0% probability

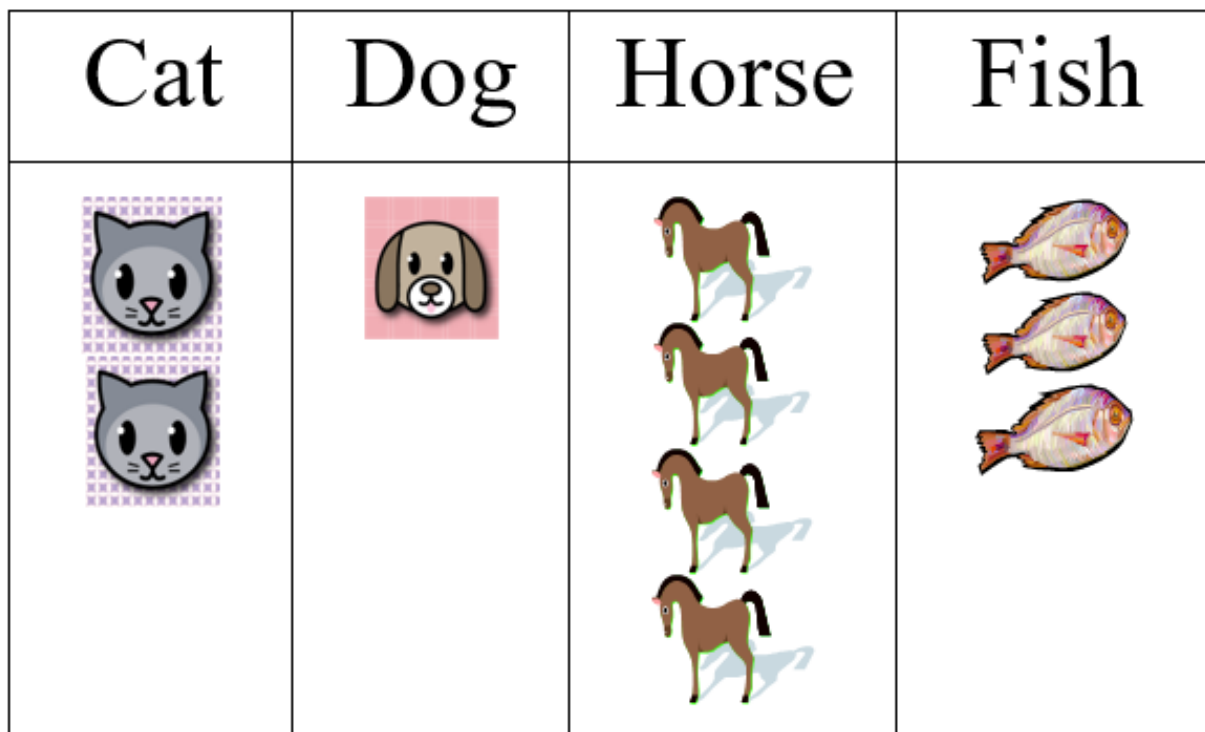
Table

Pets

Animals	Number
Dogs	2
Cats	1
Birds	3
Lizards	1

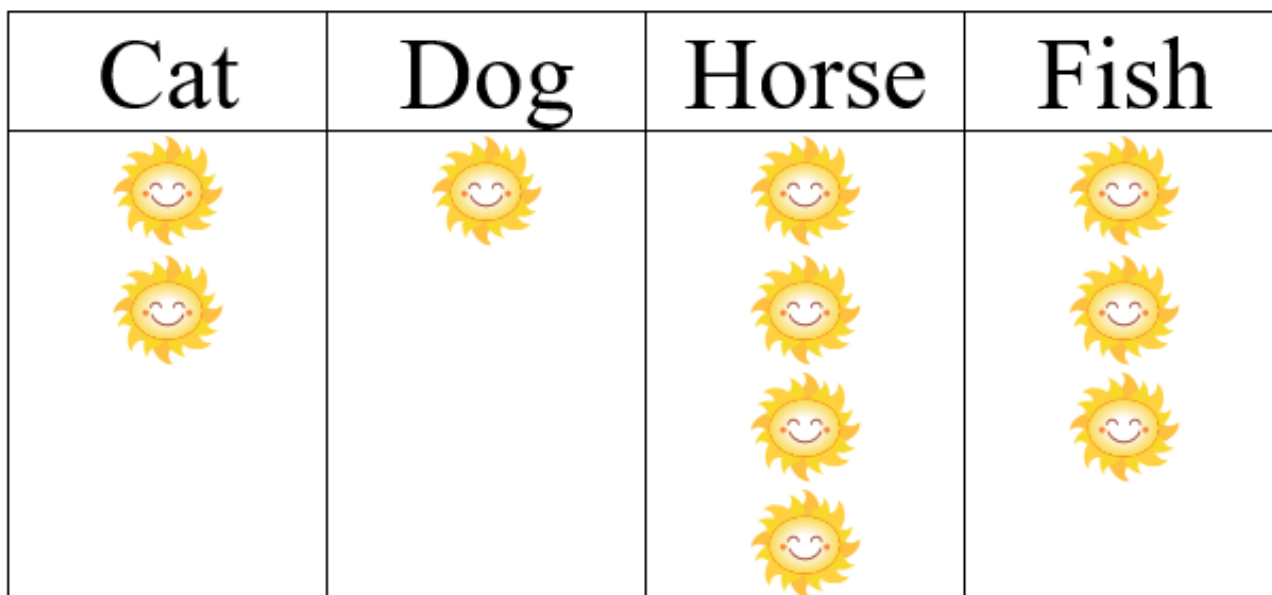
Picture Graph


Our Favorite Pets



Pictograph

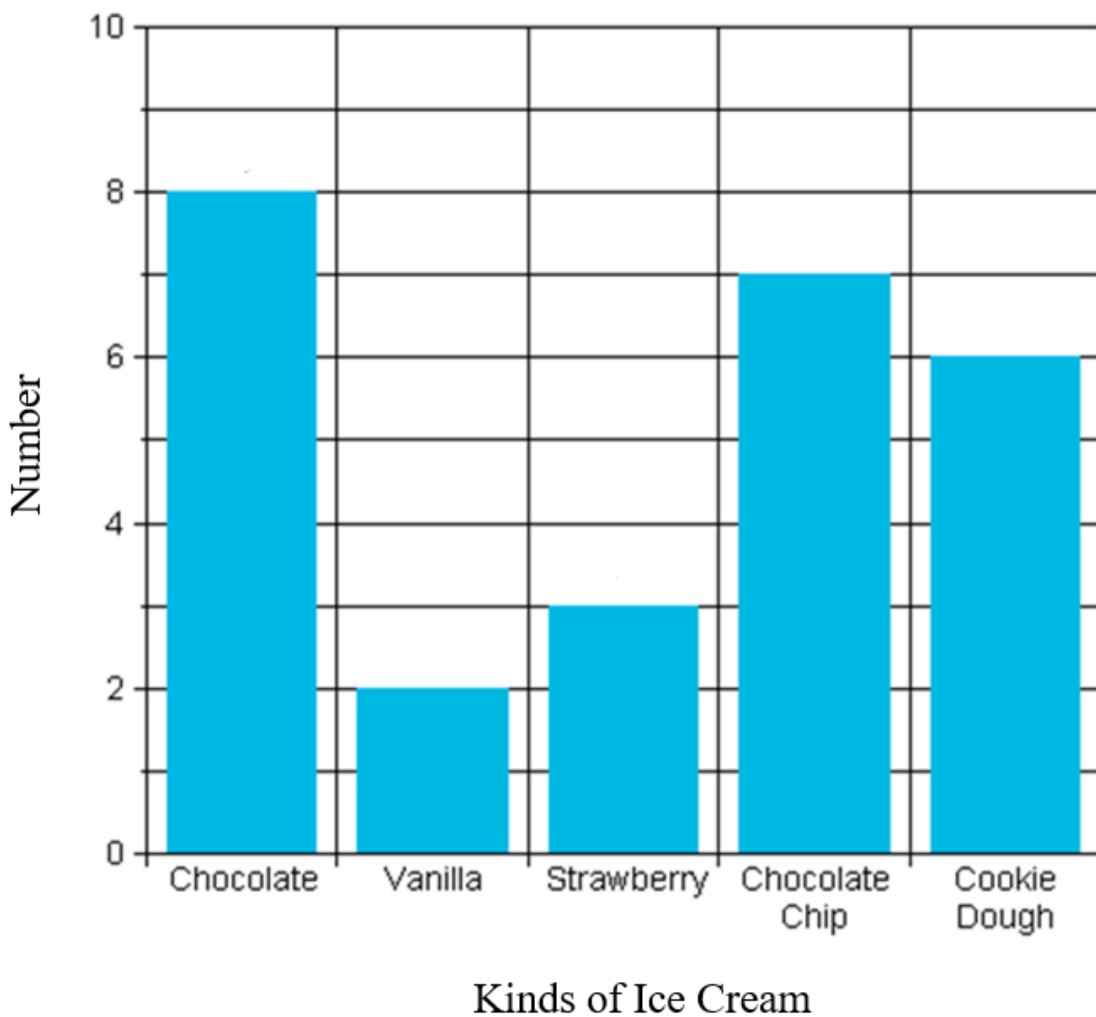
Our Favorite Pets



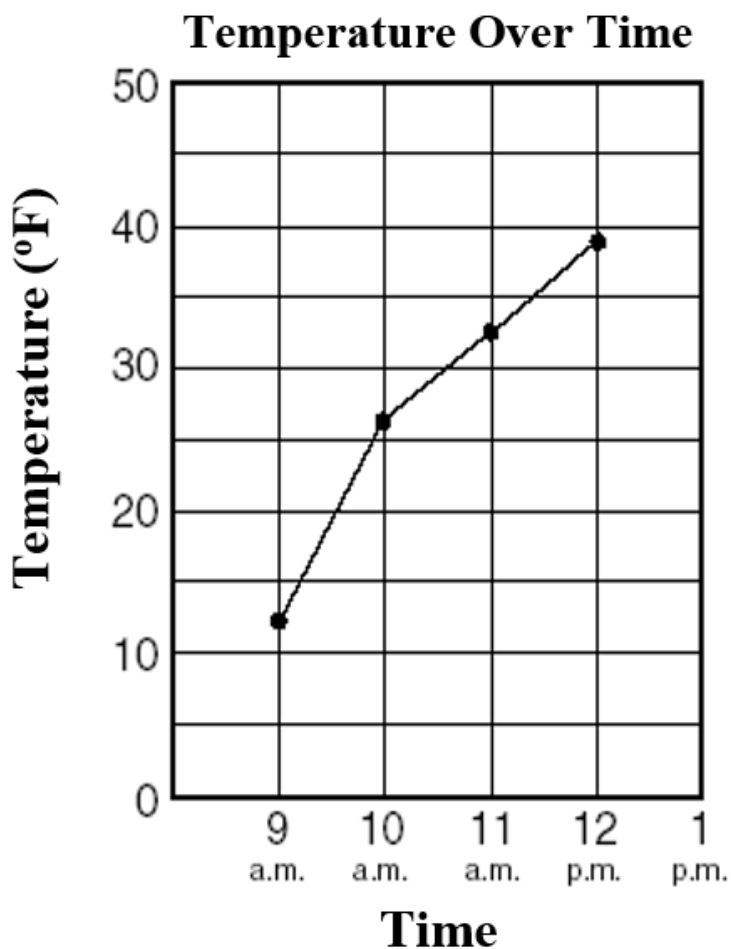
 = 1 student

Bar Graph

Our Favorite Ice Cream

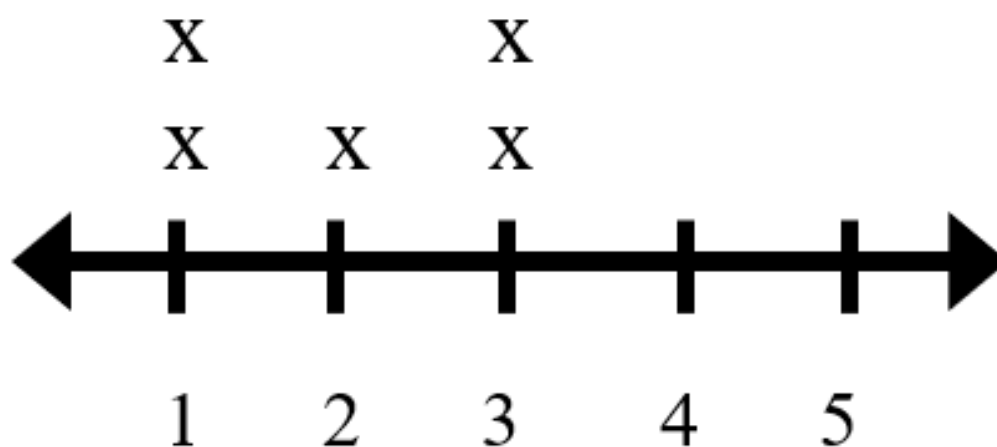


Line Graph



Line Plot

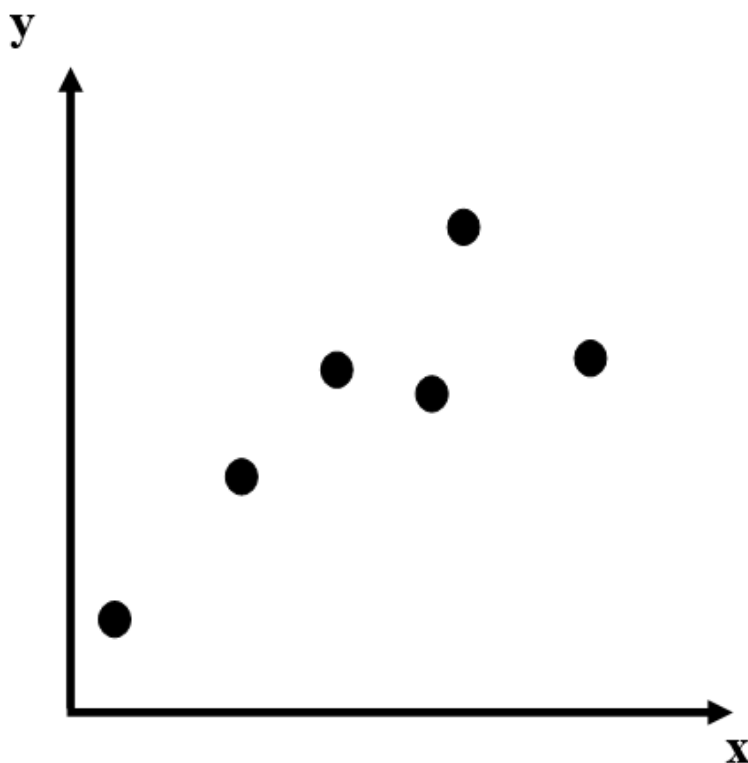
Number of Pets



x represents 1 pet

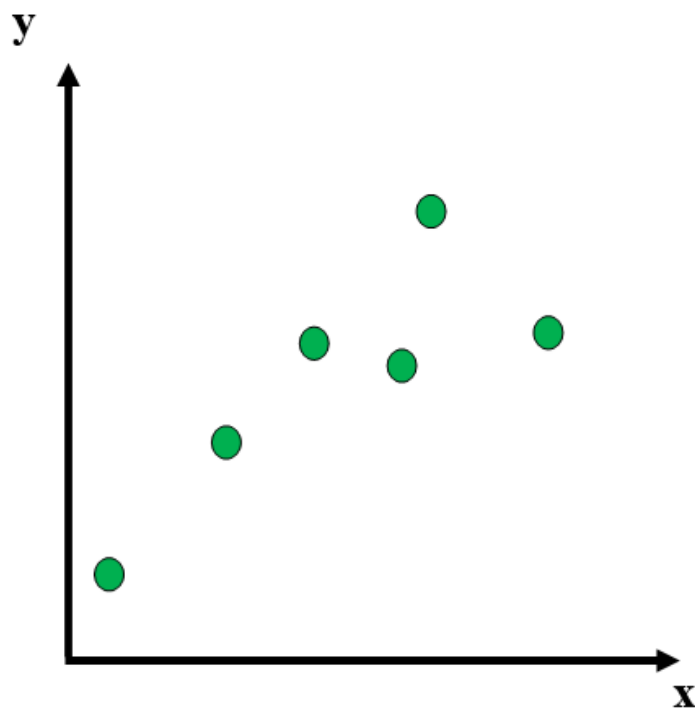
Scatterplot

shows the relationship between
two sets of data



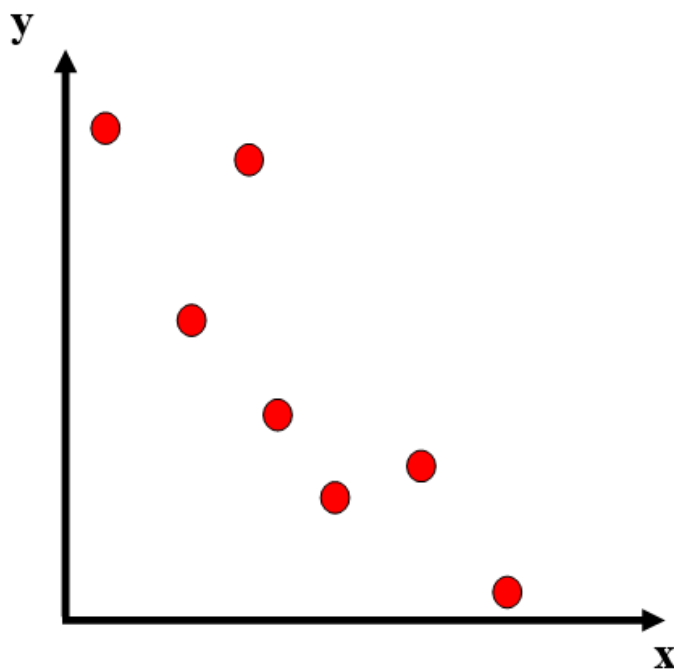
Positive Relationship

Points slope from lower left
to upper right.



Negative Relationship

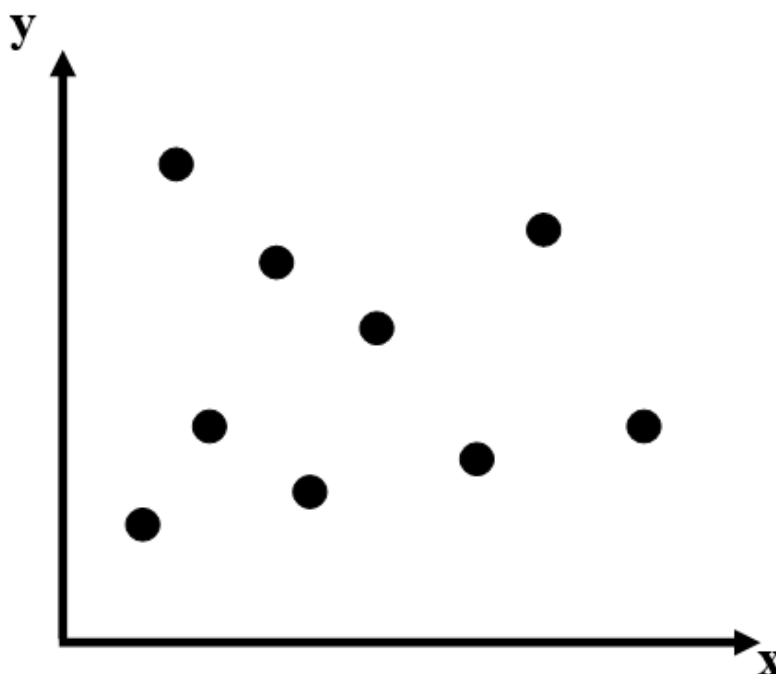
points slope from upper left
to lower right



VAAP Version

No Relationship

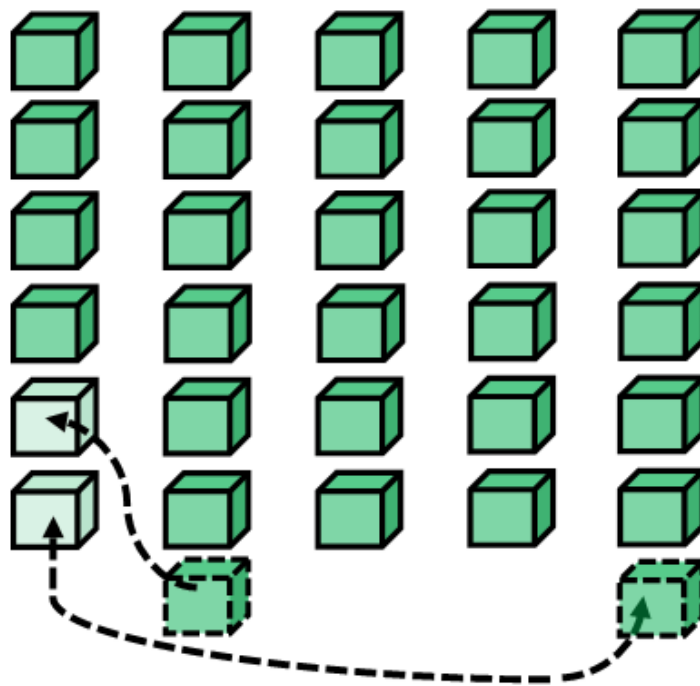
No relationship exists



Mean

fair share

4, 7, 6, 6, 7



the mean is 6

Mean

fair share or
average

6, 9, 8, 8, 9

$$6 + 9 + 8 + 8 + 9 = 40$$

$$40 \div 5 = 8$$

$$\text{mean} = 8$$

VAAP Version

Patterns, Functions and Algebra

Counting by Twos

0



VAAP Version

Counting by Fives

0



5



10



15

Pattern

growing patterns



Input output table

8, 10, 13, 17, ___

Rule: _____	
Input	Output
4	11
5	12
6	13
10	17

Rule: _____	
Input	Output
145	130
100	85
75	60
50	?

Rule: _____	
Input	Output
2	8
4	16
?	20
8	32

Proportional Relationship

Terry's neighbor pays him \$10 for every 2 hours he works.

$$2 \cdot ? = 10$$

Hours	1	2	4
Pay in \$?	10	20

Note: In the original image, red arrows and a red ".5" indicate a multiplier of 0.5 being applied to the hours to get the pay.

How much does Terry earn per hour?

$$\$1.00 \cdot 5 = \$5.00$$

VAAP Version

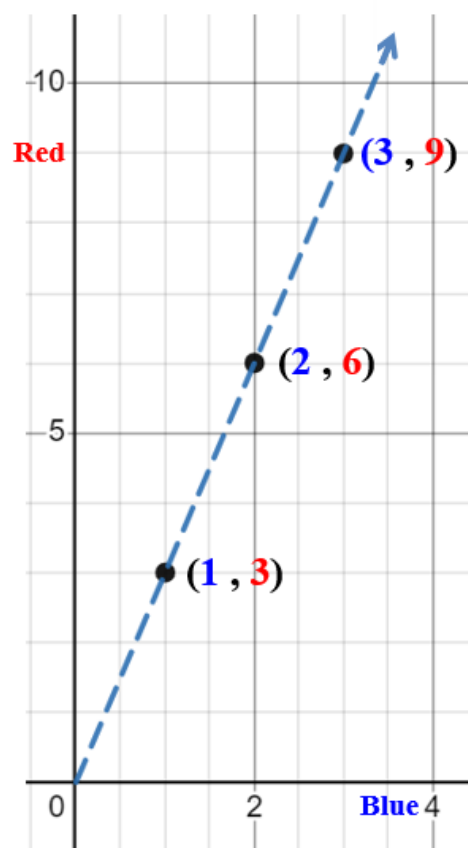
Terry earns \$5.00 per hour

Connecting Representations

Table

blue	1	2	3
red	3	6	9

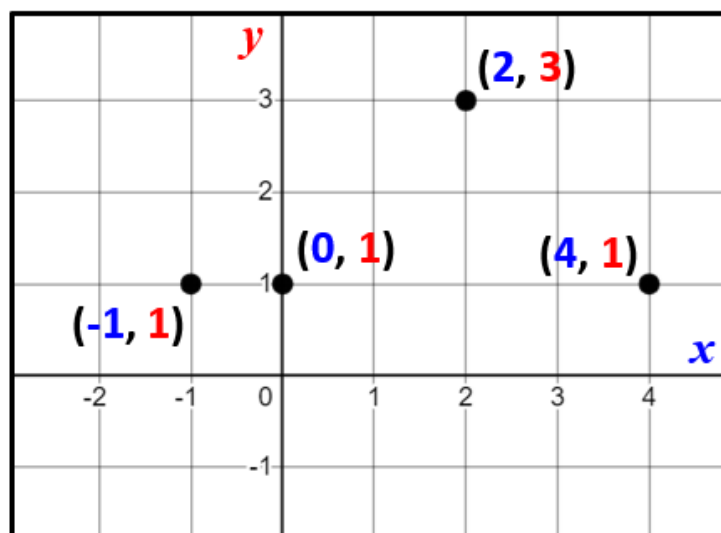
Graph



Function

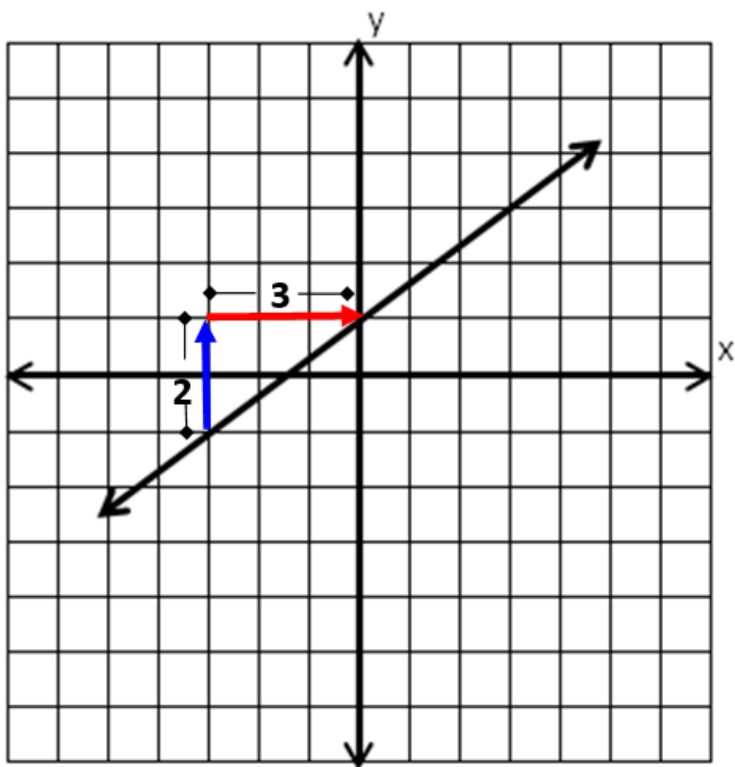
$\{(-1, 1), (0, 1), (2, 3), (4, 1)\}$

x	y
-1	1
0	1
2	3
4	1



Slope

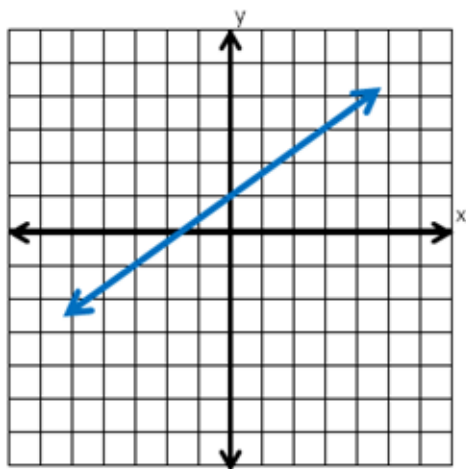
rate of change or
the “steepness” of the line



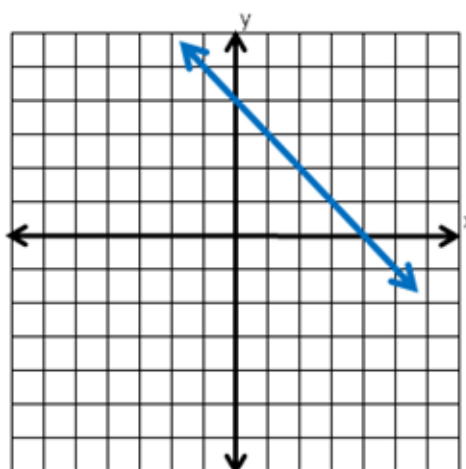
$$\text{Slope} = \frac{2}{3}$$

$$\text{slope} = \frac{\text{change in } y}{\text{change in } x} = \frac{\text{vertical change}}{\text{horizontal change}}$$

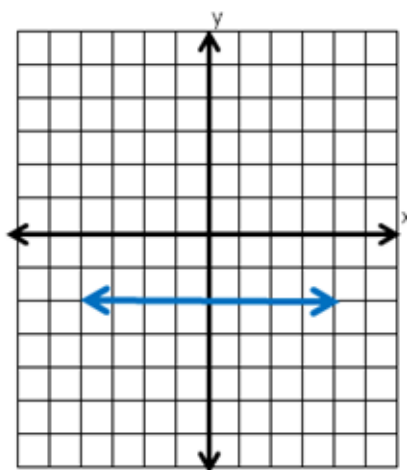
Slope



positive slope



negative slope



zero slope

Equation

(Number Sentence)

$$8 = 3 + 5$$

$$6 - 2 = 4$$

$$75 = 50 + 25$$

Expression

a representation of a
quantity

12.8

14×351

$45 \div 8$

Variable

a **symbol** used to represent an unknown quantity

y

$$3 + x = 2.08$$

$$A = \pi r^2$$

Variable Expression

an expression that contains
numbers, operations, and
variables

$$4 + s$$



variable

Term

$$\underbrace{3x} + \underbrace{2y} - \underbrace{8}$$

3 terms

$$\underbrace{-5x} + \underbrace{(-2)}$$

2 terms

$$\underbrace{7a}$$

1 term

Constant

$$4p - 12$$

$$7 + x - 6x$$

Like Terms

$$\textcircled{4x} - 3y + \textcircled{6x} - 7$$

$$\textcircled{2y} - 3 + \textcircled{7y}$$

$$-5r - \textcircled{6} + 2r + \textcircled{2}$$

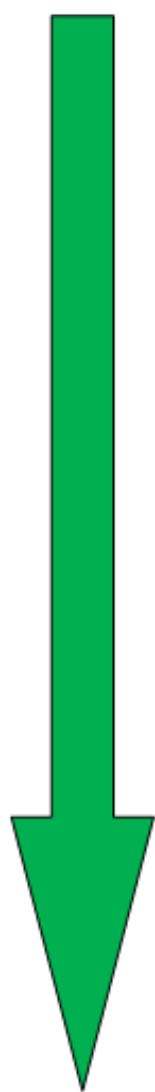
Verbal to Algebraic

Verbal	Algebraic
A number multiplied by 5	$5n$
The sum of four and a number	$4 + n$
The sum of a number and two is five	$y + 2 = 5$
Eighteen is three times a number	$18 = 3x$

Verbal to Algebraic

Verbal	Algebraic
A number multiplied by 5	$5n$
The sum of negative two and a number	$-2 + n$
The sum of a number and two is five	$y + 2 = 5$
Negative thirty-six is nine times a number	$-36 = 9x$

Order of Operations



Grouping Symbols

} () $\sqrt{\square}$
 { } | \square
 [] $\frac{\square}{\square}$

Exponents

Multiplication
or Division

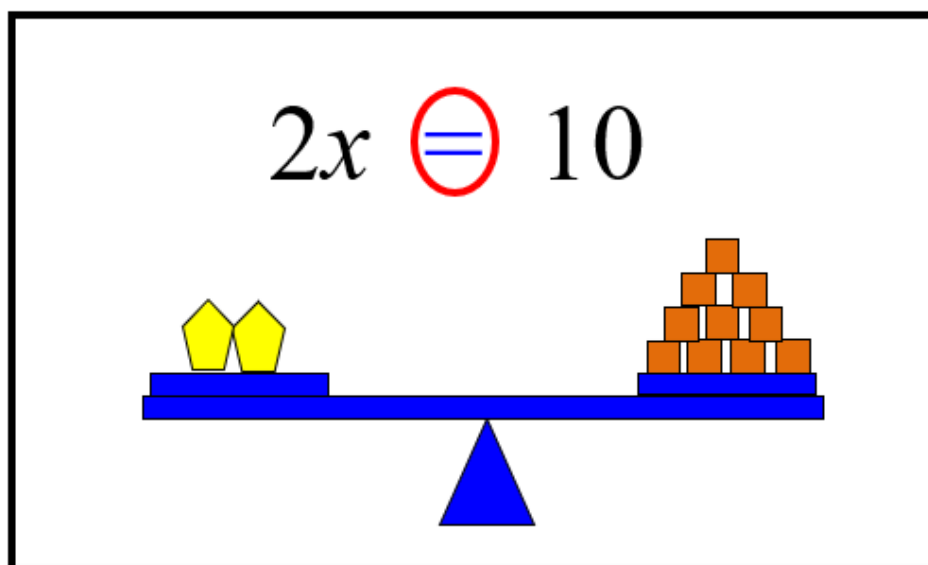
} Left
 to
 right

Addition
Subtraction

} Left
 to
 right

Equation

a mathematical sentence stating that two expressions are equal

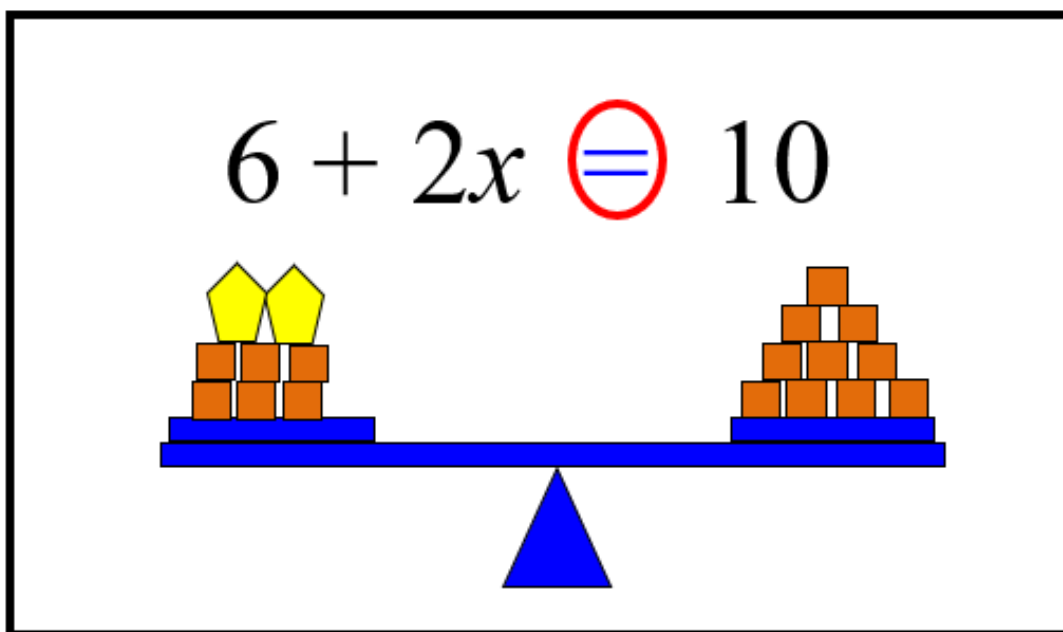


$$-38 = y + 21$$

$$8x = -16$$

Equation

a mathematical sentence stating that two expressions are equal

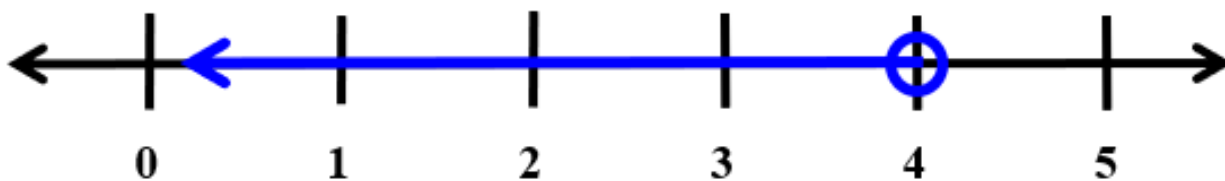


$$-12 \text{=} } 2n - 2$$

$$3j + (-5) \text{=} } 1$$

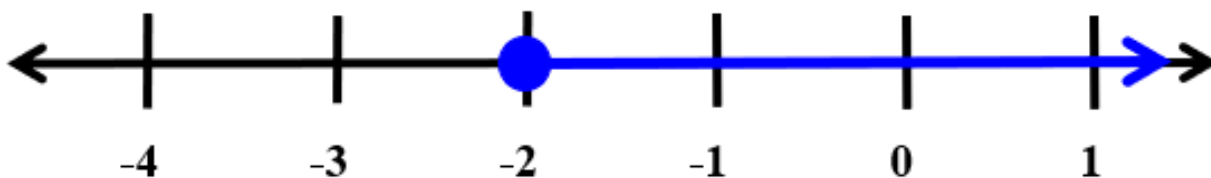
Inequality

$$y < 4 \text{ or } 4 > y$$



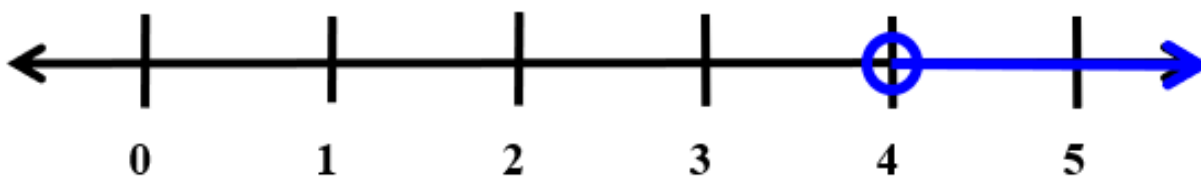
$$x + (-5) \geq -7$$

$$x \geq -2$$

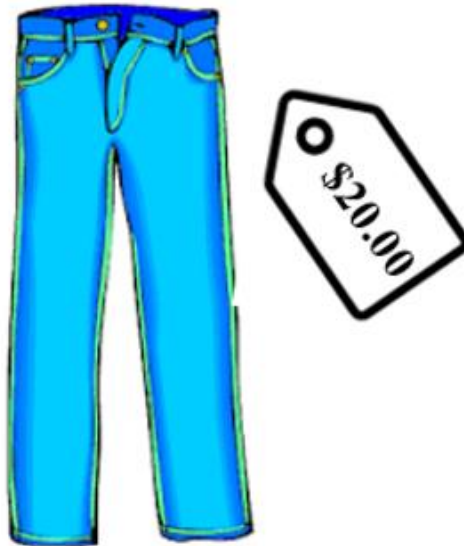


$$-3 < a - 7$$

$$4 < a \text{ or } a > 4$$



Sales Tax



Shirt:	\$12.00
Pants:	\$20.00
Subtotal:	\$32.00
<hr/>	
Tax:	\$1.76
<hr/>	
Total:	\$33.76

Subtotal: add item prices

$$12.00 + 20.00 = 32.00$$

Total: add **subtotal** and **tax**

$$32.00 + 1.76 = 33.76$$