Objective: Compare or classify triangles as scalene, equilateral, or isosceles.

Triangles are polygons that have three sides, three vertices, and three angles.

Triangles can be classified by the number of congruent sides, which are sides of equal length.

The same markings on the sides of a triangle show that the sides are congruent.

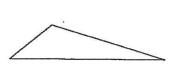
Examples:



Equilateral triangle Three congruent sides



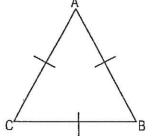
Isosceles triangle Two congruent



Scalene triangle No congruent sides

1.) Shown is Equilateral triangle ABC.

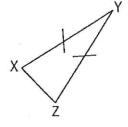
$$\overline{AB} = 6 \text{ cm}.$$



2.) Shown is Isosceles triangle XYZ.

$$\overline{XY} = 5$$
 in.

What must be the length of side \overline{YZ} ?



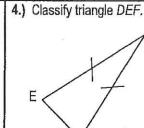
3.) Shown is Scalene triangle MNO.

Circle the set of numbers which could be the lengths of the three sides.

3 cm, 5 cm, 6 cm

2 cm, 4 cm, 4 cm

2 cm, 2 cm, 2 cm



Equilateral

Scalene

Isosceles

5.) Draw an Equilateral triangle. Label the vertices. Name the sides and their lengths.

6.) Draw a Scalene triangle. Label the vertices. Name the sides and their lengths.

Objective: Compare or classify triangles as equiangular, obtuse, acute, or right.

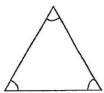
Triangles are polygons that have three sides, three vertices, and three angles.

Triangles can be classified according to their angles.

All triangles have at least 2 acute angles. Acute, Right, and Obtuse triangles are classified according to their third angle.

The same markings on the angles of a triangle show that the angles are congruent.

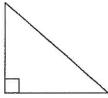
Examples:



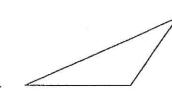
Equiangular triangle Three congruent angles



Acute triangle Three acute angles

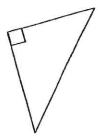


Right triangle One right angle



Obtuse triangle One obtuse angle

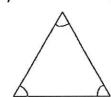
1.)



What type of triangle is this?

Circle the correct answer:

Equiangular Acute Right Obtuse 2.)



What type of triangle is this?

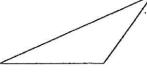
Circle the correct answer:

Equiangular Acute Right Obtuse

3.) What type of triangle is this?

Circle the correct answer:

Equiangular Acute Right Obtuse



4.) What type of triangle is this?

Circle the correct answer:

Equiangular Acute Right Obtuse



5.) Melissa needs to draw some triangles as part of her Geometry homework. She confuses acute and obtuse triangles. Which triangle should have one angle that is greater than 90°? Why?

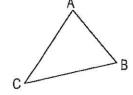
6.) Jack and his dad are building a triangular pen for Jack's new puppy, a Jack Russell Terrier. Jack's dad wants to make the project as easy as possible. Which type of triangle should they use as a model? Why?

Objective: Use the concept of the sum of angles in any triangle is 180° to determine the third angle measure of a triangle given two angle measures without a diagram.



Triangles are polygons that have three sides, three vertices, and three angles. The sum of the measures of the angles of a triangle is 180°.

Examples:



Angle A = 65° Angle B = 60° Angle C = ?

180 - 65 - 60 = 55 Angle C = 55°

1.) Given triangle XYZ:

Angle
$$Y = 45^{\circ}$$

2.) Given triangle MNO:

Angle
$$O = 135^{\circ}$$

3.) Given right triangle ABC:

Angle A is the right angle

Angle B = 55°

Angle C = _____°

4.) Given equiangular triangle FGH:

What is the measure of ...

Angle F? ____ °

Angle G? _____o

Angle H? _____°

5.) Given triangle JKL:

Angle J = 120°

Angle K = 50°

Angle L = 20°

Is this possible? Explain why or why not using math.

6.) Teri is making a scrapbook page of her trip to the art exhibit, "Geometry in Your World." She wants to use a large triangle as her background focus. She draws a triangle with the first two angle measures of 100° and 25°.

What is the angle measure of the third angle? _____o

Please show your work:



Objective: Identify and describe the parts of a circle (circumference, radius, or diameter).

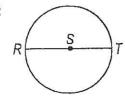
A circle is a set of points equidistant from a given point.

The radius is a line segment that has one endpoint at the center and the other endpoint on the circle.

The diameter is a line segment that passes through the center of the circle and has both endpoints on the circle.

The circumference of a circle is the distance around the circle.

Examples:



 \overline{SR} is a radius of the circle. \overline{ST} is also a radius of the circle. \overline{RT} is the diameter of the circle.

The circumference of the circle is the distance around the circle from point R to point R.

1.)

Name a radius: _____

Name the diameter: ___

To measure the circumference of the circle, you could start at point _____ or point _____.

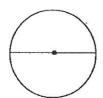
2.)

B

Label radius WV.

Label radius WX.

Name the diameter:



3.) Draw a circle.

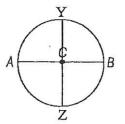
Draw a center point and label it H.

Draw the diameter \overline{FG} .

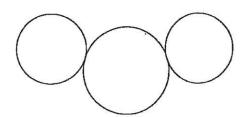
Name the two radii: _____ and ____

Name all of the radii:

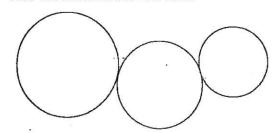
Name all of the diameters:



5.) Draw and label a diameter in each circle. Draw and label 2 radii in each circle.



6.) Draw and label a diameter in each circle. Draw and label 2 radii in each circle.



Objective: Identify and compare the relationship between the parts of a circle using radius, diameter, and circumference (pi = 3.14).

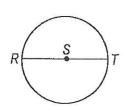


The radius of a circle is $\frac{1}{2}$ the length of the diameter. $r = \frac{1}{2} d$ The diameter of a circle is 2 times the length of the radius. d = 2r

The circumference of a circle is found by multiplying the diameter by pi (3.14). $C = \pi d$

The circumference of a circle can also be found by multiplying 2 times the radius by pi (3.14). $C = 2\pi r$

Examples:



diameter $\overline{RT} = 4$ cm radius $\overline{ST} = \frac{1}{2}$ x 4cm = 2cm

radius $\overline{SR} = 2 \text{ cm}$ diameter $\overline{RT} = 2 \times 2 \text{cm} = 4 \text{ cm}$

 $C = \pi d$ $C = 3.14 \times 4 cm$ C = 12.56 cm

 $C = 2\pi r$ $C = 2 \times 3.14 \times 2cm$ $C = 6.28 \times 2cm$ C = 12.56cm

1.) Given a circle with a radius of 7 cm:

Determine the diameter:

Determine the circumference:

2.) Give a circle with a diameter of 18 inches:

Determine the radius: _____

Determine the circumference: ____

3.) Draw a line from each part of a circle to it's measurement:

31.4 cm

radius

5 cm

diameter

10 cm

circumference

4.) Fill in the blanks:

The _____ is twice the length of the

The _____ is 3.14 times the

The _____ is half the length of the

- 5.) Esteban is helping his mom make a circular flower bed. The diameter of the flower bed is 12 feet. How much fencing will they need to buy for the circumference of the flower bed? Please show your work.
- 6.) Penelope is painting huge circles on her bedroom walls! She wants one of the circles to be 1/2 purple and 1/2 vellow. The diameter of the circle is 121 inches. She tells her dad to measure 61 inches from the edge of the circle to find the middle of the circle. Is this correct? Please explain your answer with math. @

Unit: KNOWLEDGE of MEASUREMENT

Objective: Measure length to the nearest 1/16 inch using a ruler.

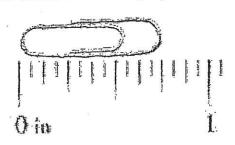
You will need a ruler for this lesson!

1 1 3 1 5 3 7 1 9 5 11 3 13 7 15 6 8 16 4 16 8 16 2 16 8 16 4 16 8 16

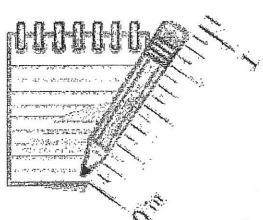


**Note: This ruler is NOT to scale.

Examples: Measure the following objects to the nearest 1/16 inch.



Paperclip = $\frac{3}{4}$ inch



Pencil = $\frac{15}{16}$ inch

Measure the objects to the nearest 1/16 inch.

1.)

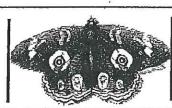
2.)



3.)



4.)



5.)



6.)



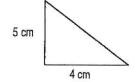
Unit: KNOWLEDGE of MEASUREMENT

Objective: Estimate and determine the area of a triangle with whole number dimensions.



The area (A) of a triangle is one half the product of the base (b) and the height (h). The formula for finding the area of a triangle is: $A = \frac{1}{2}bh$ and is measured in square units.

Examples:



$$A = \frac{1}{2}bh$$
 $A = \frac{1}{2}x4x5$ $A = \frac{1}{2}x20$

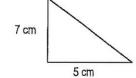
$$A = 10 \text{ cm}^2$$



$$A = \frac{1}{2}bh$$
 $A = \frac{1}{2}x4x5$ $A = \frac{1}{2}x20$

$$A = 10 \text{ cm}^2$$

1.) Determine the area of the triangle.



 $A = cm^2$

2.) Determine the area of the triangle.



3.) Determine the area of an obtuse triangle with a height of 11 cm and a base of 22 cm.

4.) Determine the area of an isosceles triangle with a base of 13 cm and a height of 26 cm.

5.) World famous pastry chef, Chen Lee, is designing a birthday cake for his son, who is a Geometry teacher. He has 4 layers, all triangles. He wants to put the largest layer (in area) on the bottom and the smallest layer on the top. Determine the area of each layer and order them from largest to smallest (4 = largest, 1 = smallest)

6.) Natasha's dorm room is shaped like a triangle. The college brochure says it has an area of 875 square feet. The room is 35 feet long. Determine the width of the room at its widest point.



Unit: KNOWLEDGE of MEASUREMENT

Objective: Estimate and determine the volume of rectangular prisms with whole number dimensions.

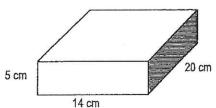


The amount of space inside a three-dimensional figure is the volume of the figure.

Volume (V) is measured in cubic units.

The volume of a rectangular prism is related to its dimensions. Volume (V) = length (I) x width (w) x height (h)

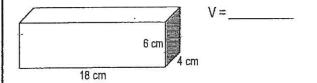
Examples:



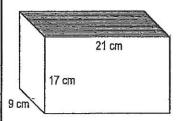
$$V = 20 \times 14 \times 5$$

$$V = 1400 \text{ cm}^3$$

1.) Determine the volume of the rectangular prism. Please show your work.



2.) Determine the volume of the rectangular prism. Please show your work.



- 3.) Determine the volume of a rectangular prism with a length of 13 cm, a width of 55 cm, and a height of 65 cm. Please show your work.
- 4.) Determine the volume of a rectangular prism with a height of 35 cm, a length of 89 cm, and a width of 15 cm. Please show you work.
- 5.) Tyrone has a fish tank that measures 36 in. long, 24 in. high, and 18 in. wide. He wants to fill the fish to a height of 14 inches. What will be the volume of water in the tank? Please show your work.



Draw the tank and label the dimensions. Draw the water level. This does not need to be drawn to scale.

6.) Shanika has a lamp that she wants to send to her sister in Baltimore. The lamp is in the shape of a rectangular prism. It measures 14" high, 9" wide, and 3" long. She wants to buy a box so that there is 1" all around the lamp for bubble wrap.

What should be the dimensions of the box?

What is the volume of the box? Please show your work.



Unit: KNOWLEDGE of STATISTICS

Objective: Determine the measures of central tendency (mean, median, and mode) and the range.



A number that helps describe all of the data in a data set is a measure of central tendency.

The mean is the sum of the data divided by the number of pieces of data.

The median is the middle number of the ordered data (least to greatest.)

The mode is the number or numbers that occur most often.

The range is the difference between the greatest and least values of the data set.

Examples:

Jac	Jacket Prices (\$)				
25	34	39	41		
45	52	27	22		
56	61	15	27		

Find the mean, median, mode, and range of the data.

Mean =
$$25 + 34 + 39 + 41 + 45 + 52 + 27 + 22 + 56 + 61 + 15 + 27$$

$$=$$
 444 $=$ 37 The mean price of a jacket is \$37.

Median = 15 22 25 27 27 34 39 41 45 52 56 61 (data ordered)

$$=$$
 $\frac{34+39}{2}$ = 36.5 The median price of a jacket is \$36.50.

Mode = \$27 because it is the only piece of data that occurs more than once.

Range =
$$61 - 15 = $46$$

1.) Find the mean, median, mode, and range for each set of data.

6, 9, 2, 4, 3, 6, 5

2.) Find the mean, median, mode, and range for each set of data.

13, 7, 17, 19, 7, 15, 11, 7, 21

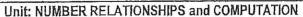
3.) Find the mean, median, mode, and range for each set of data.

28, 32, 23, 43, 32, 27, 21, 34

4.) Find the mean, median, mode, and range for each set of data.

157, 124, 157, 124, 157, 139



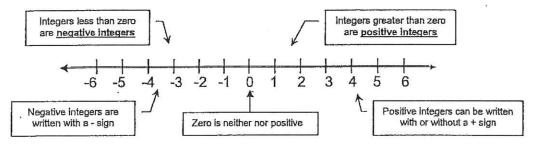


Objective: Read, write, and represent integers.



Examples:

Integer: Any number from the set {... -3,-2,-1,0,1,2,3...}



Write an integer to describe each situation

a height increase of 3 inches

The word increase represents positive. The integer is 3 or +3.

50 feet below sea level EX:

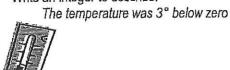
The word below represents negative. The integer is -50.

- Write an integer to describe: The stock market-increased 75 points
- 2.) Write an integer to describe: A loss of 15 yards



- Write an integer to describe the situation: Nancy owes her friend \$10
- Write an integer to describe: 4.) Frederick is located 290 feet above sea level.

Write an integer to describe:



Write an integer to describe: The 6th grade has 12 fewer students than last year

Objective: Identify and determine equivalent forms of proper fractions as decimals, percents, and ratios - A.

Examples: Write $\frac{21}{25}$ as a decimal

Method 1:

Change $\frac{21}{25}$ to a fraction with a denominator of 10, 100, or 1000

EX:
$$\frac{21}{25} = \frac{?}{100}$$

(Use 100, since 25 divides into 100 evenly)

$$\frac{21}{25} = \frac{x4}{x4} = \frac{84}{100}$$
 $\frac{84}{100} = 0.84$ as a decimal

Method 2: Divide 21 by 25

$$\frac{21}{25} \longrightarrow 25)21.00$$

$$-200$$

$$100$$

$$-100$$

Therefore:
$$\frac{21}{25} = 0.84$$

1.) Write
$$\frac{19}{20}$$
 as a decimal. Use method 1

2.) Write $\frac{7}{8}$ as a decimal. Use method 2.

3.) Write
$$\frac{3}{16}$$
 as a decimal. Use method 2

4.) Write $\frac{27}{40}$ as a decimal. Use method 2

5.) Write
$$\frac{3}{4}$$
 as a decimal. Use method 1

6.) Write $\frac{3}{5}$ as a decimal. Use method 1



Objective: Identify and determine equivalent forms of proper fractions as decimals, percents, and ratios - B.

Key Concept: Percent (%) is a ratio that compares a number to 100

Fraction to Percent:

EX: Change $\frac{19}{25}$ to a percent

Since % means out of 100, $\frac{19}{25} = \frac{?}{100}$

$$\frac{19}{25} = \frac{x4}{x4} = \frac{76}{100}$$

$$\frac{76}{100} = 76\%$$

Percent to fraction:

EX: Change 75% to a fraction in simplest form

75% means 75 out of 100

 $75\% = \frac{75}{100}$ Write the percent as a fraction with a denominator of 100

$$\frac{75 \div 25}{100 \div 25} = \frac{3}{4}$$
 Simplify

1.) Change $\frac{17}{20}$ to a percent

2.) Change 84% to a fraction in simplest form

3.) Change $\frac{3}{4}$ to a percent

4.) Change 90% to a fraction in simplest form

- 5.) Juan answered $\frac{24}{25}$ questions correctly on his quiz. What percent of the questions did he get correct?
- 6.) 78% of the class completed their homework last night. What fraction of the class completed their homework?



Objective: Add and subtract fractions and mixed numbers and express answers in simplest form.

Adding and Subtracting Fractions:

- 1) determine the least common denominator (LCD) of the fractions
- 2) rewrite each fraction as an equivalent fraction using the LCD
- 3) Add or subtract the fractions
- 4) Simplify if necessary

EX: Add
$$\frac{1}{2} + \frac{3}{8}$$

- 1) LCD of 2 and 8 is 8
- 2) $\frac{1}{2} = \frac{4}{8}$ $+\frac{3}{8} = \frac{3}{8}$
- 3) $\frac{7}{8}$
- 4) (can't be simplified)

- **EX:** Subtract $3\frac{3}{5} 1\frac{1}{6}$
 - 1) LCD of 5 and 6 is 30
 - $3\frac{3}{5} = 3\frac{18}{30}$
 - $\begin{array}{r}
 -1\frac{1}{6} = -1\frac{5}{30} \\
 2\frac{13}{30}
 \end{array}$
 - 4) (can't be simplified)

1.)
$$\frac{4}{6} + \frac{1}{3} =$$

2.)
$$\frac{11}{12} - \frac{5}{8} =$$

3.)
$$1\frac{3}{8} + 2\frac{3}{4} =$$

4.)
$$3\frac{5}{6} - 1\frac{4}{5} =$$

- 5.) Shelly has two pieces of yarn. One is $1\frac{1}{2}$ yards long and the other is $2\frac{3}{4}$ yards long. How much yarn does she have altogether?
- 6.) Marty weighs 64 ¼ pounds and Nathan weighs 76 ½ pounds. How much more does Nathan weigh than Marty?



Objective: Multiply fractions and mixed numbers and express answers in simplest form.

Multiplying Fractions and Mixed Numbers:

- 1) Change Mixed numbers to improper fractions
- 2) Multiply numerators
- 3) Multiply denominators
- 4) Simplify if necessary

EX: multiply $\frac{1}{2} \times \frac{3}{8}$

- 1) No mixed numbers
- 2) $\frac{1}{2} \times \frac{3}{8} = \frac{3}{8}$
- 3) $\frac{1}{2} \times \frac{3}{8} = \frac{3}{16}$
- 4) (can't be simplified)

EX: Multiply $\frac{1}{3} \times 6\frac{3}{7}$

- 1) $6\frac{3}{7} = \frac{45}{7}$ as an improper fraction
- 2) $\frac{1}{3} \times \frac{45}{7} = \frac{45}{1}$
- 3) $\frac{1}{3} \times \frac{45}{7} = \frac{45}{21}$
- 4) Simplified: $\frac{45}{7} = 2\frac{1}{7}$

1.) $\frac{5}{6} \times \frac{1}{2} =$

2.) $\frac{9}{10} \times \frac{2}{3} =$

3.) $2\frac{1}{2} \times 1\frac{2}{5} =$

- 4.) $2\frac{1}{4} \times 3\frac{1}{3} =$
- 5.) Belinda lives 1 ½ times further from school than Jamie does. If Jamie lives 4 1/5 miles from school, how far does Belinda live?
- 6.) Mario practices his guitar every day for ¾ of an hour. How long does he practice for week?

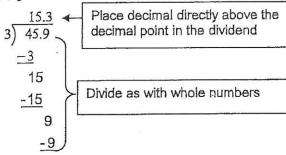


Unit: NUMBER RELATIONSHIPS and COMPUTATION						
Objective: Multiply decimals. Examples: Multiply 3.4 X 1.2 3.4 X.1.2 6.8						
Answer 4.08						
1.) 1.2 X 0.5	2.) 3.3 X 4.6					
3.) 0.4 X 0.6	4.) 7.89 X 5					
5.) Turkey cost \$5.79 a pound. How much will 2.9 pounds of turkey cost? Round to the nearest cent.	6.) Ralph bought 6 CDs at a cost of 17.75 each. How much did the CDs cost altogether?					

Unit: NUMBER	RELATIONSHIPS and	COMPUTATION
5 50 15		

Objective: Divide decimals.

Example: Divide 45.9 ÷ 3



1.) 4)12.5 2.) 5)32.12

3.) 215 ÷ 10 4.) 3 ÷8

5.) Maria and two of her friends shared the cost of their lunch. If the lunch cost \$15.90, how much would each one have to pay? 6.) If seven oranges cost \$4.13, how much would one orange cost?



U. W. MUMPER DELATIONS UND LOCALIDADE	NEW TOTAL CONTROL OF THE PARTY					
Unit: NUMBER RELATIONSHIPS and COMPUTATION Objective: Determine 10, 20, 25, or 50 percent of a whole number.						
Example: Determine 25% of 40						
Method 1: Change the percent to a fraction and multiply	Method 2: Change the percent to a decimal and multiply					
25%= 1/4	25%= 0.25	40 <u>X 0.25</u>				
$\frac{1}{4} \times 40 = 10$	0.25 X 40 = 10.00	200 +800				
Therefore 25% of 40 is 10.	Therefore 25% of 40 is 10.					
1.) Determine 20% of 65.	2.) Determine 50% of 120.	,				
3.) Determine 25% of 20.	4.) Determine 10% of 35.					
5.) 20% of the 250 students ate pizza for lunch. How many students ate pizza?	6.) Nia saved 10% on her CD purcha originally cost \$24.90, how much	ase. If the CD did she save?				

Unit: NUMBER RELATIONSHIPS and COMPUTATION Objective: Estimate to determine the product of a decimal and a whole number					
Example: Multiply 6.45 X 7					
1. Round to the nearest whole numbers. 6.45 rounds Since 7 is air		eady a whole number, it stays the same.			
2. Multiply the rounded numbers 6 X 7					
3. Answer	42				
Fathers and afthe following multiplicate	ian neahlama	Dound all decimals to the propert whole number			
1.) 6 X 1.65	ion problems.	Round all decimals to the nearest whole number. 2.) 0.82 X 4			
°		8			
		*			
3.) 3 X 9.95		4.) 12.9 X 7			
		, and the second			
5.) Three pairs of shoes are priced at \$3 Estimate the total cost for the all 3 p		6.) If you work 6 hours at \$6.35 an hour, estimate how much you would make?			
shoes.		,			

Objective: Estimate to determine the quotient of a decimal.

Example: Divide 45.9 ÷ 10

- Estimate to the nearest tens.
 45.9 rounds to 50
 10 stays the same
- 10)50
- 2. Divide with estimated numbers.
- 3. Answer.

5

Estimate each of the following division problems. Round all numbers to the nearest ten.

1.)

35)196.5

2.)

14)37.1

3.) 7.49 ÷ 14

4.) 89.904 ÷34

5.) Maria and twelve of her friends shared the cost of their lunch. If the lunch cost \$75.90, estimate how much would each one have to pay? 6.) Brianna and 15 of her friends bought sodas after their lacrosse game. If the drinks cost \$43.29, estimate how much each person would owe if the cost is divided equally?



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