Ch. 1.2-1.3

Define function:

Ch. 1.2

Which tables of values represent a function?

a.

x	y
4	7
-2	-3
5	9
8	1

b.

x	y
4	-1
-2	0
4	7
6	3

c.

x	y
4	-2
5	5
1	-2
3	3

d.

x	y
7	3
-3	-1
-5	8
0	3

Ch. 1.2

Define Domain:

Define Range:

Ch. 1.2

Mike decided to start his own lawn care business this month. Mike spent $4500 to buy equipment, and he spends $1.50 in gasoline every hour he operates the equipment. Write an equation to model Mike's total cost of operating his business.

A, C, & D

A function is a relation where each input is paired with exactly one output

$$f(x) = 1.50x + 4500$$

Domain is the set of all inputs

Range is the set of outputs

Ch. 1

Which would be the most likely next algebraic step required to solve the following equations?

A. $8x = 40$

B. $6x - 4 = 14$

C. $3x + 2 - 5x = 12$

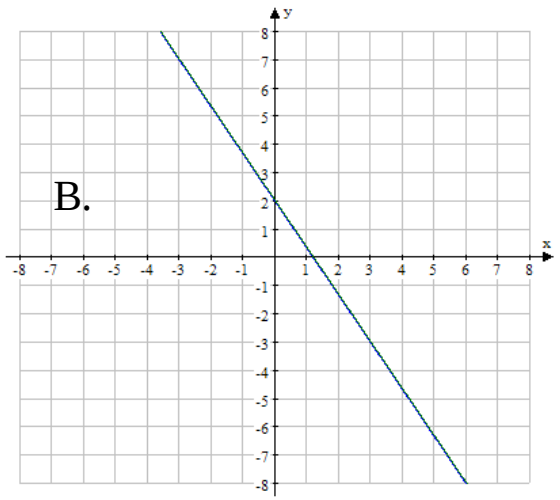
Ch. 1.6

Give the equation of the following lines in SLOPE-INTERCEPT form.

A.

A line with a slope of ½ and a y-intercept of 5.

B.



Ch. 1.5

Define Rate of Change.

Ch. 1.5

What are intercepts on a graph?

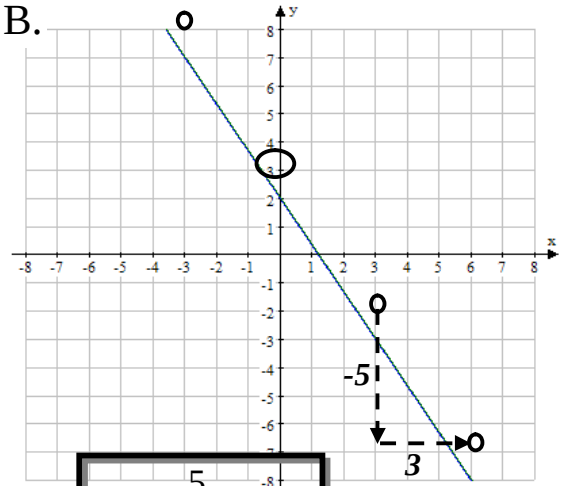
A. A line with a slope of ½ and a y-intercept of 5.

$y = mx + b$

SLOPE | y-intercept

$y = \frac{1}{2}x + 5$

B.



$y = -\frac{5}{3}x + 2$

Which would be the most likely next algebraic step required to solve the following equations?

A. $8x = 40$; $\frac{8x}{8} = \frac{40}{8}$ **(DIVISION)**

B. $6x - 4 = 14$ **(ADDITION)**

$+4 \quad +4$

C. $3x + 2 - 5x = 12$ **(COMBINE LIKE TERMS)**

$-2x + 2 = 12$

Intercepts are the locations where the graph crosses each of the axes.
The x-intercept is the locations where the graph crosses the x-axis.
The y-intercept is the locations where the graph crosses the y-axis.

Rate of change is the slope for a linear equation

$m = \frac{y_2 - y_1}{x_2 - x_1}$, rise over run

For a non-linear graph, you can still use the slope formula, but the rate of change will not be constant

Rate of change = $\frac{Change\ in\ y}{Change\ in\ x}$

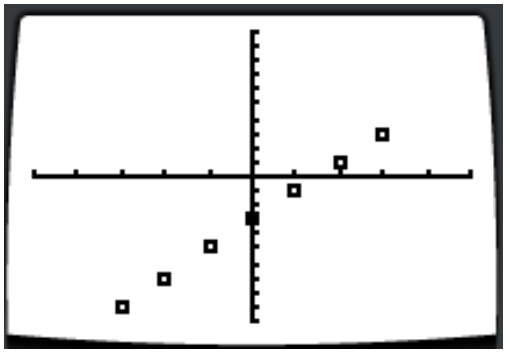
Ch. 1.8

A line that most closely follows a trend in data is called the

_____

Ch. 1.8

Given the scatter plot, find the equation of the best-fit line.



Ch. 1.2

Given the table of values, state the domain and range.

x	2	-1	3	5	9
y	-7	0	8	-6	-2

Ch. 1.2

On a trip, you drive your car at a constant rate of 55 mph.

time(hours)	1	2	3	4
distance(miles)	55	110	165	220

State the independent and dependent variables.

$f(x) = 2x - 3$

Best-fitting line

Independent Variable: Time

Dependent Variable: Distance

Domain: {-1, 2, 3, 5, 9}

Range: {-7, -6, -2, 0, 8}

Ch. 2.1 – 2.3

Perform the given operation:

A. $(x+2)(x-3)$

B. $(2x^2+3x)+(5x-4)$

C. $(2x^2+3x)-(5x-4)$

D. $(6x^3+4x^2+8x)/(2x)$

Ch. 2.4

Expand the following:

A. $(x+1)^2$

B. $(x+1)^3$

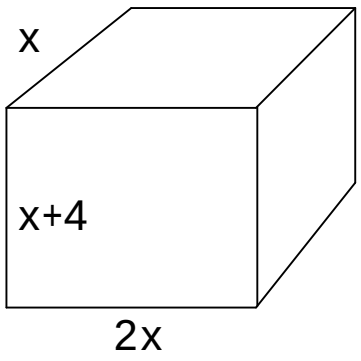
C. $(x+1)^4$

Ch. 2.4

What is Pascal's Triangle and the Binomial Theorem?

Ch. 2.2

Find the volume of the box:



To expand a binomial, you can either multiply each out, or use Pascal's Triangle

A. x^2+2x+1

B. x^3+3x^2+3x+1

C. $x^4+4x^3+6x^2+4x+1$

A. Multiplication x^2-x-6

B. Addition $2x^2+8x-4$

C. Subtraction $2x^2-2x+4$

D. Division $3x^2+2x+4$

Volume = length x width x height

Volume = (2x)(x)(x+4)

$= 2x^3+8x^2$

			1					row 0
			1	1				row 1
		1	2	1				row 2
		1	3	3	1			row 3
	1	4	6	4	1			row 4
	1	5	10	10	5	1		row 5
1	6	15	20	15	6	1		row 6
1	7	21	35	35	21	7	1	row 7

Each row begins and ends with a 1 and each number between the 1's is the sum of the pair of numbers above it in the previous row. Rows 0 – 7 are shown to the right. The **triangle continues indefinitely.**

The **binomial theorem** enables you to expand a power of a binomial without having to do FOIL for hours.

Let n be a positive integer.

$$(x+y)^n = \sum_{k=0}^{n}\binom{n}{k}x^{n-k}y^k = \binom{n}{0}x^n y^0 + \binom{n}{1}x^{n-1}y^1 + \ldots + \binom{n}{n-1}x^1 y^{n-1} + \binom{n}{n}x^0 y^n$$

Ch. 2.10 – 2.11

Describe the transformations of a, b, h, & k.

$$y = a(bx - h)^2 + k$$

Ch. 2.12 – 2.13

What are "zeros" of a function?

Ch. 2.5 – 2.9

Factor the following:

A. By GCF: $8x^3 + 16x^2 + 24x$

B. By Grouping: $x^2 + 4x - 3x - 12$

C. Quadratic: $x^2 + 5x + 6$

D. Cubic: $x^3 + 3x^2 + 3x + 1$

Ch. 2.9

Solve the following:

A. $x^2 + 7x + 12 = 0$

B. $x^2 - 16 = 0$

C. $x^2 - 6x - 7 = 0$

D. $x^2 = 18$

Zeros are solutions to an equation, where x = 0.
These solutions cross the x-axis.

a: vertical stretch a > 1
vertical compression 0 < a < 1
-a is a reflection over the x-axis
b: -b is a reflection over the y-axis
h: horizontal shift
x + h moves left, x – h moves right
k: vertical shift
k > 0 moves up, k < 0 moves down

Solutions

A. $x = -3, x = -4$

B. $x = 4, x = -4$

C. $x = -1, x = 7$

D. $x = \pm 3\sqrt{2}$

Factors

A. $8x(x^2 + 2x + 3)$

B. $(x-3)(x+4)$

C. $(x+3)(x+2)$

D. $(x+1)^3$

Ch. 2.1

Describe the Following:

A. Monomial

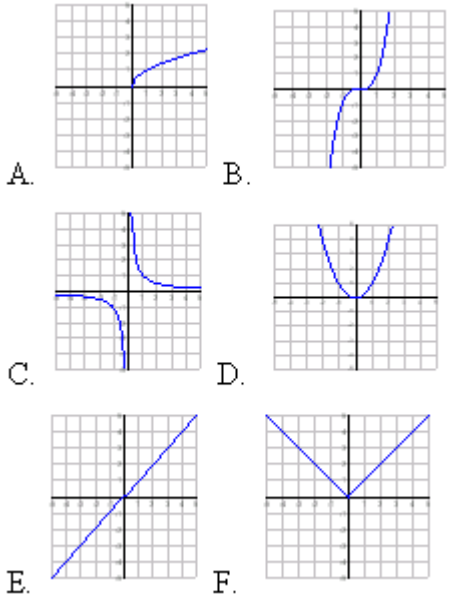
B. Binomial

C. Trinomial

Ch. 1-3

Matching

1. $f(x) = x$
2. $f(x) = x^2$
3. $f(x) = x^3$
4. $f(x) = \sqrt{x}$
5. $f(x) = |x|$
6. $f(x) = \frac{1}{x}$



Ch. 1-3

Matching

1. $f(x) = x$
2. $f(x) = x^2$
3. $f(x) = x^3$
4. $f(x) = \sqrt{x}$
5. $f(x) = |x|$
6. $f(x) = \frac{1}{x}$

A. Quadratic

B. Absolute Value

C. Rational

D. Cubic

E. Linear

F. Radical

Ch. 3.12

Which equations show lines that are parallel, perpendicular or neither?

A.

$y = -2x + 1$

$y = \frac{1}{2}x - 2$

B.

$y = \frac{2}{3}x + 5$

$y = \frac{3}{2}x + 3$

C.

$y = -3x + 1$

$y = -3x$

WHY?

1. E – no curves
2. D – 1 u-turn
3. B – 2 u-turns
4. A – ½ of a sideways quadratic
5. F – v-shaped graph
6. C – 2 parts that do not touch

A. Monomial – Contains 1 term
   Ex. $3x$
B. Binomial – Contains 2 terms
   Ex. $4x + 7$
C. Trinomial – Contains 3 terms
   Ex. $X^2 - 4x + 3$

$$y = mx + b$$

A. Perpendicular because the slopes are negative reciprocals
B. Neither
C. Parallel because each line has the same slope

1. E
2. A
3. D
4. F
5. B
6. C

Ch. 3.5

Solve the following:

A. $2\sqrt{x+1}=8$

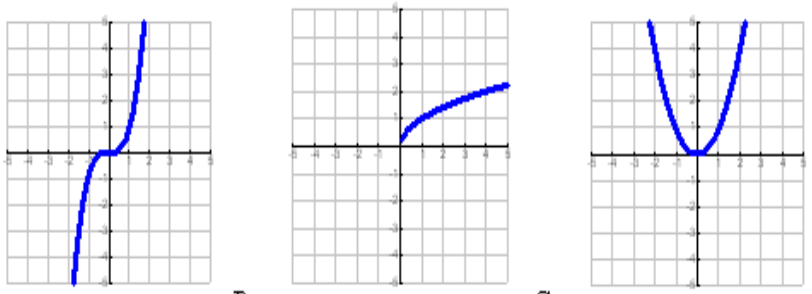
B. $\sqrt{3x}-4=2$

C. $\sqrt{x+2}=x+2$

D. $\sqrt{-1-x}=x+3$

Ch. 3.1

Determine the symmetry of the graphs as either Odd, Even or Neither.



A. B. C.

Ch.3.1

Describe the following:

A. End Behavior

B. Maximums and Minimums

C. Intervals of Increasing and Decreasing

Ch. 3.4

Simplify the following:

A. $\sqrt{288x^2y^3}$ $2\,12\;x\;y$

B. $\sqrt{8}+\sqrt{18}-\sqrt{2}$

A. Odd – Symmetric about the origin, Rotational symmetry
B. Neither – no symmetry
C. Even – Symmetry about the y-axis, Reflected over the y-axis

To get rid of a square root, get the square root by itself and square both sides

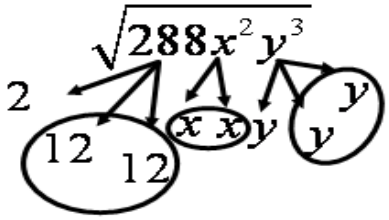
A. $x = 15$
B. $x = 12$
C. $x = -1, x = -2$
D. $x = -2$

x=-5 is an extraneous solution

To simplify radicals, make a factor tree. Look for perfect square factors and leave any factor that is not a perfect square in the radical

A. $12xy\sqrt{2y}$

B. $4\sqrt{2}$



End Behavior – The directions the arrows point at either end of a graph

Max. – the highest point on a graph

Min. – the lowest point on a graph

Increasing – Area where the graph is rising from left to right

Decreasing – Area where the graph is falling from left to right

Ch. 3.10

Add the Rational Expression

$$\frac{x+1}{3x}+\frac{2x}{6}$$

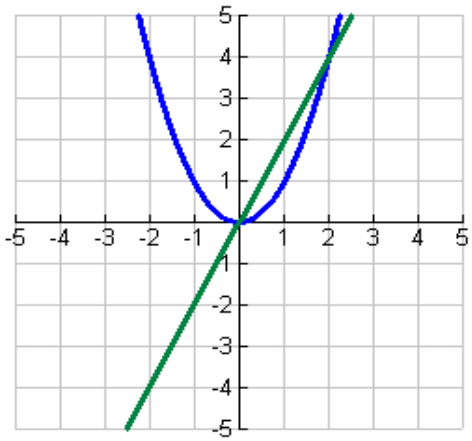
Ch. 3.10

Subtract the Rational Expression

$$\frac{3x+1}{4x}-\frac{2}{5}$$

Ch. 3.12

Determine the solutions to the system



Ch. 3.4

What is a radical conjugate?

To subtract, you must have like denominators, then distribute the subtraction sign before combining like terms. Do not forget to simplify if possible.

$$\frac{5(3x+1)}{5(4x)}-\frac{4x(2)}{4x(5)}=\frac{15x+5}{20x}-\frac{8x}{20x}=\frac{7x+5}{20x}$$

To add, you must have like denominators before combining like terms. Do not forget to simplify if possible.

$$\frac{2(x+1)}{2(3x)}+\frac{x(2x)}{x(6)}=\frac{2x+2}{6x}+\frac{2x^2}{6x}$$

$$=\frac{2x^2+2x+2}{6x}=\frac{x^2+x+1}{3x}$$

Each radical has 2 parts, the whole number and the radical. To find a conjugate, change the sign on the radical part.

$a+\sqrt{b}$ and $a-\sqrt{b}$ are radical conjugates.

Ex. $3+\sqrt{2}$ and $3-\sqrt{2}$

Solutions to a system are the locations where the graphs intersect.

(0,0) and (2, 4) are the solutions.

Ch. 3.9

Multiply the Rational Expression

$$\frac{3x+1}{6} \times \frac{x+2}{3x}$$

Ch. 3.9

Divide the Rational Expression

$$\frac{x^2+3x+2}{x+1} \div \frac{x^2+4x+4}{x+3}$$

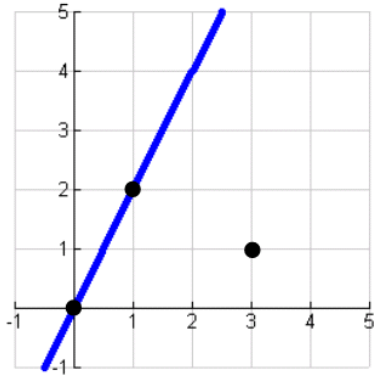
Ch.4.8

Find the excluded values or restrictions.

$$\frac{x^2+4x+8}{x^2+5x+6}$$

Ch. 4.7

How do you find the distance from a Point to a Line?



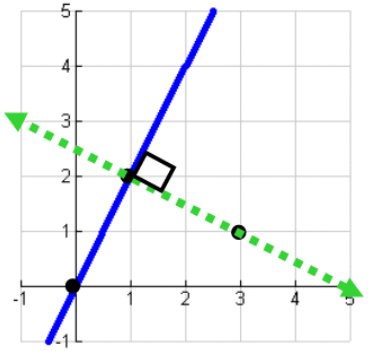
To divide, multiply by the reciprocal of the second fraction. Do not forget to simplify if possible.

$$\frac{5(3x+1)}{5(4x)} - \frac{4x(2)}{4x(5)} = \frac{15x+5}{20x} - \frac{8x}{20x} = \frac{7x+5}{20x}$$

To multiply, multiply across, remember the distributive. Do not forget to simplify if possible.

$$\frac{(3x+1)\bullet(x+2)}{6(3x)} = \frac{3x^2+7x+2}{18x}$$

Find the length of the segment that begins at the point given and is perpendicular to the line.



$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$d = \sqrt{(3-1)^2 + (1-2)^2}$$

$$d = \sqrt{(2)^2 + (-1)^2} = \sqrt{4+1}$$

$$d = \sqrt{5}$$

Factor the denominator and set each factor to zero.

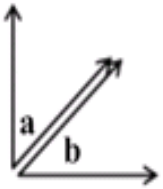
$$(x+2) = 0 \text{ and } (x+3) = 0$$

$$x \neq -2 \quad \text{and} \quad x \neq -3$$

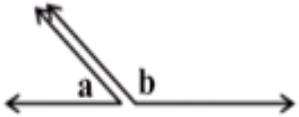
Ch. 4

Describe Each Pair of Angles.

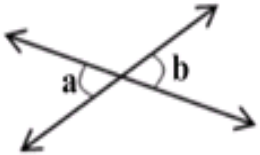
A.



B.



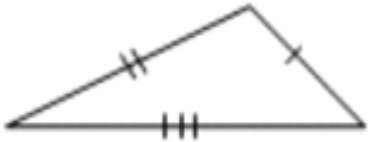
C.



Ch. 4

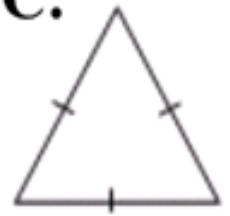
Classify each Triangle based on its sides.

A.



B.

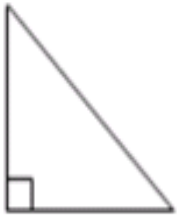
C.



Ch. 4

Classify each Triangle based on its angles.

A.



B.

C.

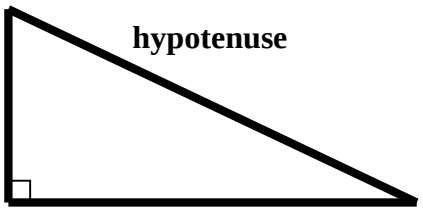
Ch. 4

Describe the hypotenuse.

A. Scalene Triangle - No Equal Sides
B. Isosceles Triangle - Exactly 2 Equal Sides
C. Equilateral Triangle - All Equal Sides

A. Complementary Angles
(2 angles that sum to 90°)
B. SUpplementary Angles
(2 angles that sum to 180°)
C. Vertical Angles
(2 angles across from each other and =)

In a right triangle, the side opposite the right angle is known as the hypotenuse.

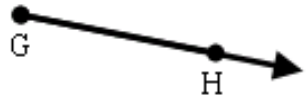


A. Right Triangle - Has One Right Angle
B. Acute Triangle - All Angles are Acute (less than 90°)
C. Obtuse Triangle - Has One Obtuse Angle (greater than 90°)

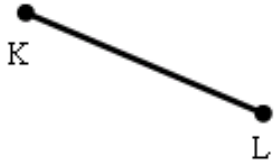
Ch. 4

Describe each Object.

A.



C.



B.

D.

Ch. 4.1

Using the Distance Formula

1. What theorem is the Distance Formula based on?

2. State the Distance Formula.

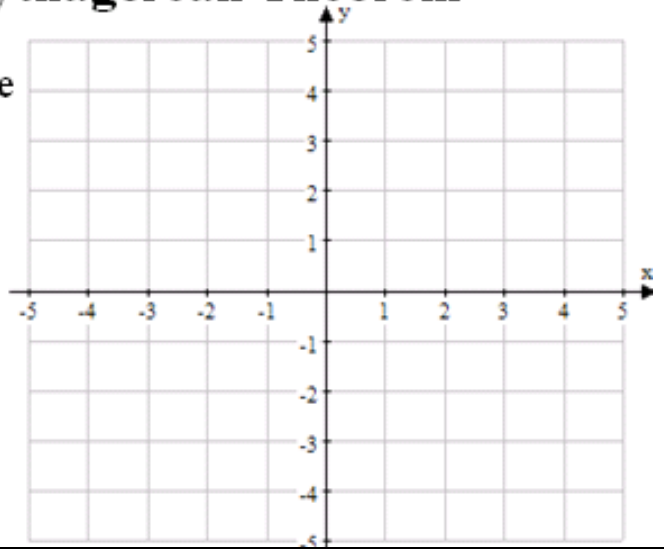
3. Using the distance formula, find the distance between the points A(−3, 2) and B(2, 5).

Ch. 4.1

Using the Pythagorean Theorem

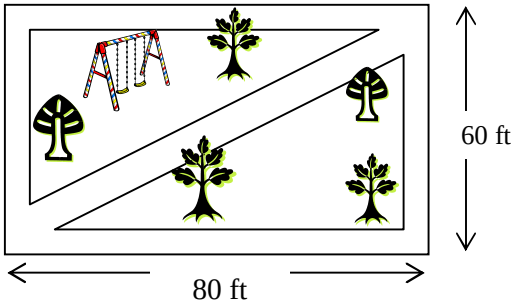
Find the distance between the points A(−3, 2) and B(2, 5).

Use the Pythagorean Theorem.



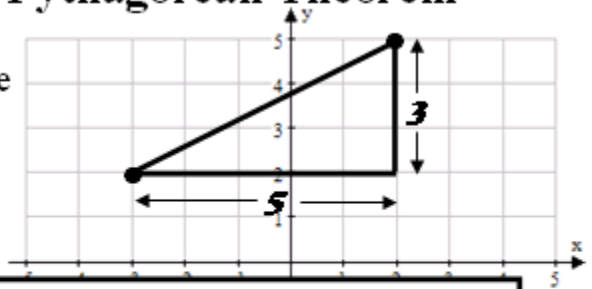
Ch. 4.1

A park is located on a rectangular city block. A path-way goes from one corner to the opposite corner. If the dimensions of the rectangle are 80 feet by 60 feet, how long is the diagonal path-way?



Using the Pythagorean Theorem

Find the distance between the points A(−3, 2) and B(2, 5).



Use the Pythagorean Theorem.

$$3^2 + 5^2 = c^2$$

$$9 + 25 = c^2$$

$$34 = c^2$$

$$\sqrt{34} = \sqrt{c^2}$$

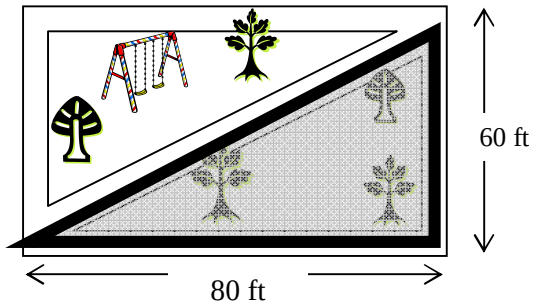
$$5.83 \approx c$$

A. Ray $\overrightarrow{GH}$ (Half of a line, one end point)

B. Line $\overleftrightarrow{IJ}$ or $\overleftrightarrow{JI}$ (Straight, one dimension)

C. Segment $\overline{KL}$ or $\overline{LK}$
(Piece of a line, two end points)

D. Point M
(Location, 0 dimensions)



$$60^2 + 80^2 = c^2$$

$$3600 + 6400 = c^2$$

$$10000 = c^2$$

$$100 = c$$

1. What theorem is the Distance Formula based on?
PYTHAGOREAN THEOREM

2. State the Distance Formula.

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

3. Using the distance formula, find the distance between the points A(−3, 2) and B(2, 5).

$$d = \sqrt{(2 - {}^-3)^2 + (5 - 2)^2}$$

$$d = \sqrt{(5)^2 + (3)^2} = \sqrt{25 + 9} = \sqrt{34} \approx 5.83$$

Ch. 4

Describe each WORD.

A. POINT

B. LINE

C. PLANE

D. RAY

E. SEGMENT

F. COLLINEAR

G. COPLANAR

Ch. 4.1

Point Y is between the points B and E. If BY = 6 and BE = 10, then what is the length of YE?

Given that point O is between points B and K. Which postulate states that BO + OK = BK

Ch. 4.5

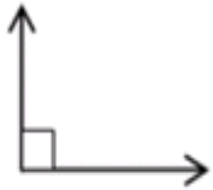
Describe the difference between a <u>postulate</u> and a <u>theorem</u>.

Describe the difference between equals (=) and congruent (≅).

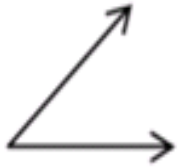
Ch. 4

Describe Each Angle.

A.



B.



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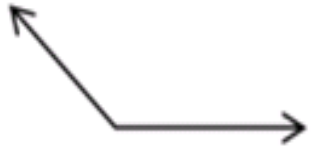
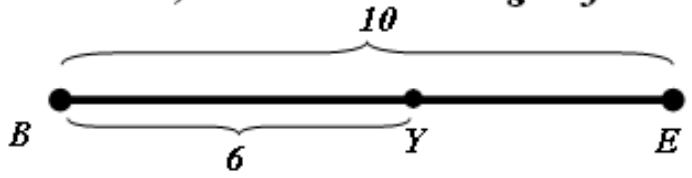


Point Y is between the points B and E. If BY = 6 and BE = 10, then what is the length of YE?



$$6 + YE = 10$$

$$YE = 4$$

Given that point O is between points B and K. Which postulate states that BO + OK = BK

SEGMENT ADDITION POSTULATE

A. Right Angle - Exactly 90°

B. Acute Angle - Less than 90°

C. Obtuse Angle - Greater than 90°

point: Location, 0-dimensions,

LINE: Straight, 1-Dimension, forever in both Directions

Plane: Flat, 2- dimensions, like a page of paper that is infinitely wide and long

RAY: half a line, one end point

SEGMENT: piece of a line, two endpoints

Collinear: All points that lie on the same line are collinear (any 2 points must be collinear)

Coplanar: All points that lie on the same plane are coplanar (any 3 points must be coplanar)

Describe the difference between a postulate and a theorem.

A postulate or an axiom is a rule that is accepted without proof where as theorems is a rule that must be proven.

Describe the difference between equals (=) and congruent (≅).

Equals suggests that two numeric values are the same where as congruent suggests that two geometric figures are the same.

Ch. 4.2

Find a counterexample:

A. All trees loose their leaves.

B. I always have school on Mondays.

Ch. 4.2

How can the Law of DETACHMENT be used with the following statements?

1) If you stayed up late last night then you will be tired today.

2) Chris stayed up late last night.

Ch. 4.4

Determine if the statement uses inductive or deductive reasoning, what is the difference?

A. You ran a mile yesterday, 2 miles today and 3 miles tomorrow. You conclude you will be running 30 miles by the end of the month.

B. You use the rise of 12 and run of 3 between two points on a line and conclude the slope is 4.

Ch. 4.2

Write an if/then statement for the following:

When it is raining, I use an umbrella.

Chris will be tired today.

If it is raining,
then I use an umbrella.

Possible counterexamples:

A. Evergreens/Fir trees do not loose their leaves.
B. I do not have school on Mondays in the summer or on holidays.

A. Inductive
B. Deductive

Inductive: Uses patterns and observations to form a conjecture.

Deductive: Uses facts, properties, definitions and logic to form an argument.

Ch. 4.3

What is the **CONVERSE** of the following statement?

If the a geometric solid has 8 faces then the geometric solid is called an octahedron.

What is the **INVERSE** of the following statement?

If a figure is a rectangle then the figure has four sides.

Ch. 4.3

What is the **CONTRAPOSITIVE** of the following statement?

If a triangle has exactly two congruent sides then the triangle is an isosceles triangle.

If the following is the INVERSE what was the original **CONDITIONAL** statement?

If a student is not a full-time student at Phoenix then the student rides a yellow school bus.

Ch. 4.3

The following statement represents $\mathbf{p} \Rightarrow \mathbf{q}$.

If it is a fish then it can swim.

What would the statement $\mathbf{q} \Rightarrow \mathbf{\sim p}$ be?

Ch. 4.4

How can the Law of SYLLOGISM be used with the following statements?

1) If you laugh then you feel better.

2) If you watch a comedy then you will laugh.

The CONTRAPOSITIVE :

If the triangle is not an isosceles triangle then a triangle does not have exactly two congruent sides.

The original **CONDITIONAL** statement:

If a student is a full-time student at Phoenix then the student does not ride a yellow school bus.

If you watch a comedy then you feel better.

The CONVERSE :

If the geometric solid is called an octahedron then the a geometric solid has 8 faces.

The INVERSE :

If a figure is **not** a rectangle then the figure does **not** have four sides.

The following statement represents **p** ⇒ **q**.

If it is a fish then it can swim.

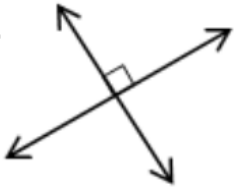
What would the statement **q** ⇒ **~p** be?

If it can swim then it is not a fish.

Ch. 4

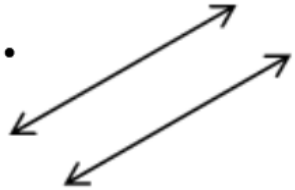
Describe Each Set of Lines.

A.



B.

C.



D.

Ch. 4

Match each of the following Properties

A. Reflexive Prop.

B. Symmetric Prop.

C. Transitive Prop.

D. Distributive Prop.

E. Addition Prop. of Equality

F. Multiplication Prop. of Equality

G. Substitution Prop.

1. $8 = 2x$
$(\frac{1}{2}) \cdot 8 = (\frac{1}{2}) \cdot 2x$

2. $6x + 2 = 20$
$6x + 2 - 2 = 20 - 2$

3. $AB + BC = AC$
$AC = AB + BC$

4. $NO = BE,\ BE = IT$
$NO = IT$

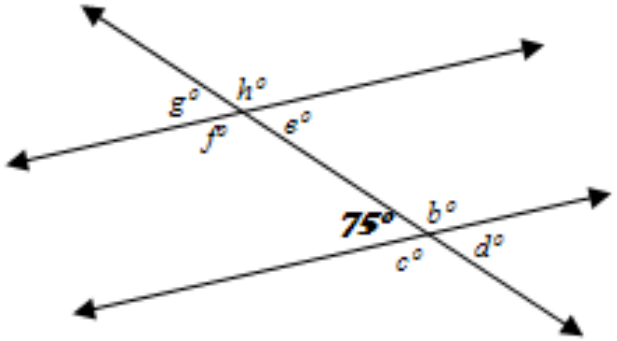
5. $-8 = 5a - a$
$-8 = 4a$

6. $4x + 3 = y,\ x = 2$
$4(2) + 3 = y$

7. $m\angle A = m\angle A$

Ch. 4.7

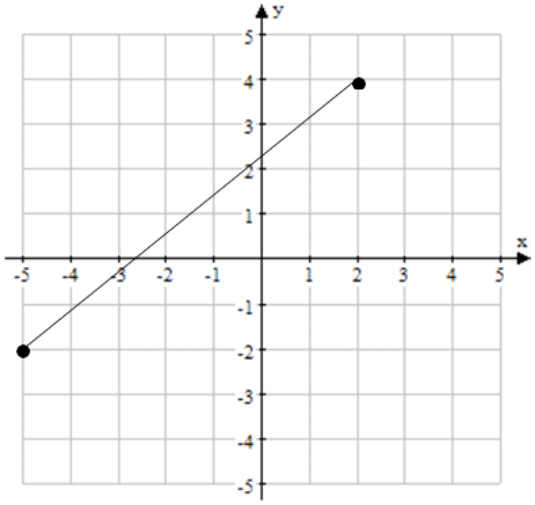
What are measures of unknown angles?



Ch. 4.11

What is the formula for finding a **midpoint** of a segment?

Find the midpoint of $\overline{AB}$
A(2, 4) and B(−5,−2)



A. Reflexive Prop. **7**

B. Symmetric Prop. **3**

C. Transitive Prop. **4**

D. Distributive Prop. **5**

E. Addition Prop. of Equality **2**

F. Multiplication Prop. of Equality **1**

G. Substitution Prop. **6**

A. **Perpendicular Lines - make a right angle**
B. **Collinear Lines - share the same space**
C. **Parallel Lines - lines in the same plane that never intersect**
D. **Intersecting Lines - lines that intersect**

What is the formula for finding a **midpoint** of a segment?

$$\left(\begin{matrix} avg. \\ x \end{matrix} , \begin{matrix} avg \\ y \end{matrix}\right)$$

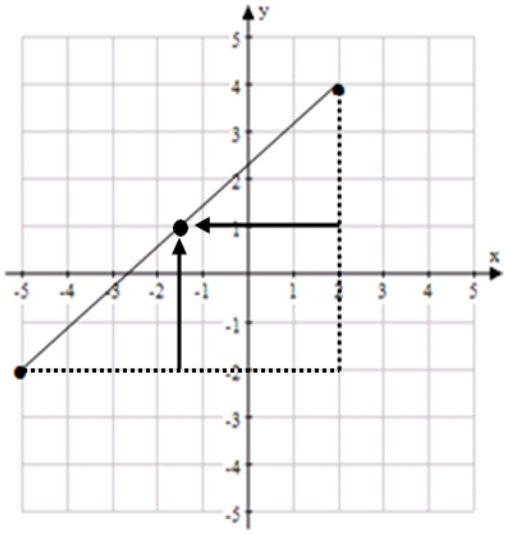
OR

$$\left(\frac{(x_1+x_2)}{2} , \frac{(y_1+y_2)}{2}\right)$$

Find the midpoint of $\overline{AB}$ A(2, 4) and B(−5,−2)

$$\left(\frac{(2+-5)}{2} , \frac{(4+-2)}{2}\right)$$

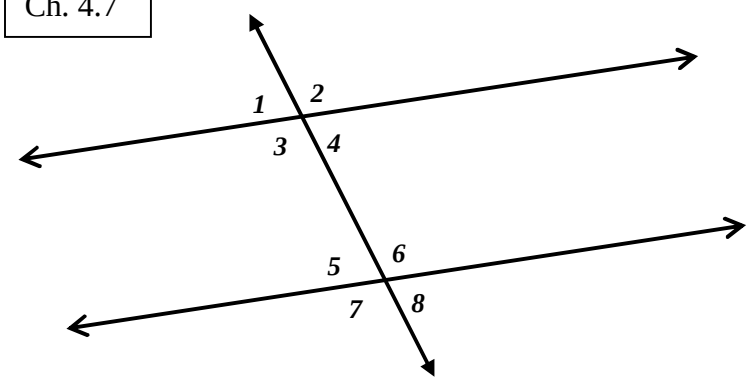
$$\left(\begin{matrix} -1.5 \\ , \end{matrix} \begin{matrix} 1 \\ \end{matrix}\right)$$



$\angle d°, \angle g°, \angle e° = 75°$

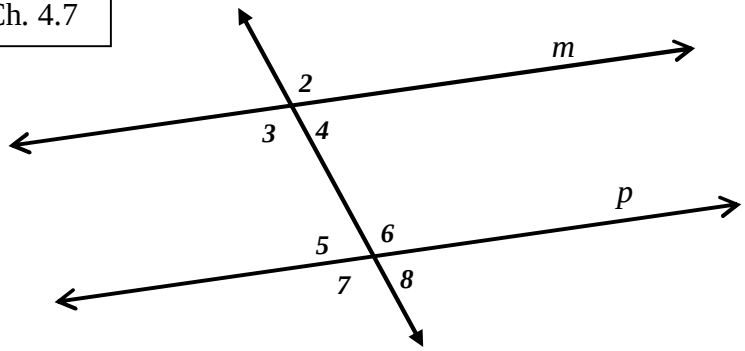
$\angle b°, \angle c°, \angle h°, \angle f° = 105°$

Ch. 4.7



1. Describe the angles ∠**1** and ∠**8.**
2. Describe the angles ∠**3** and ∠**7.**
3. Describe the angles ∠**4** and ∠**5.**
4. Describe the angles ∠**4** and ∠**6.**

Ch. 4.7



If the lines m and p are parallel describe each set of angles as congruent or supplementary.

1. ∠**1** and ∠**8**
2. ∠**4** and ∠**5**
3. ∠**2** and ∠**8**
4. ∠**3** and ∠**7**
5. ∠**4** and ∠**6**
6. ∠**2** and ∠**5**

Ch. 4.8 – 4.10

Which of the following are theorems that prove triangles congruent?

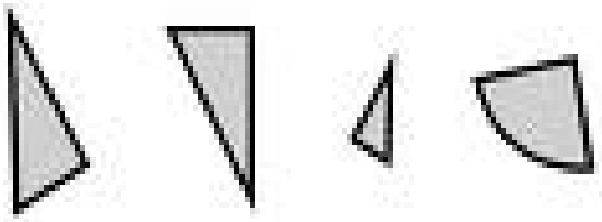
Which have special circumstances?

Which don't work at all?

AAA, SSS, ASA, SAS, AAS, SSA

Ch. 4

Identify the congruent figures.



1. Congruent
2. Congruent
3. Supplementary
4. Congruent
5. Supplementary
6. Supplementary

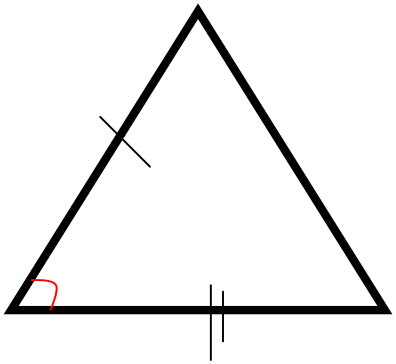
1. Alternating Exterior Angles
2. Corresponding Angles
3. Alternating Interior Angles
4. Consecutive Interior Angles

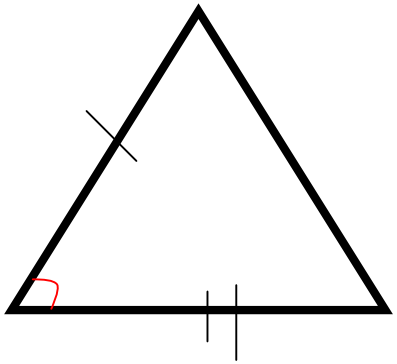
The first two figures have the same size and shape, therefore they are congruent.

- SSS, ASA, SAS, AAS, SAA will always prove two triangle congruent.
- SSA will only prove two right triangles congruent (HL).
- AAA does not prove triangles congruent (it does show that they are similar)

Ch. 4.9

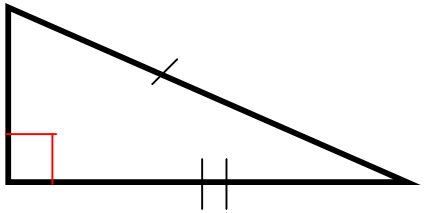
Name the congruency postulate

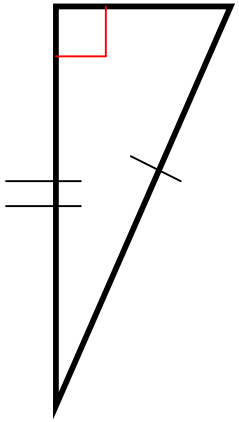




Ch. 4.9

Name the congruency postulate





Ch. 4

What is an <u>angle</u> and how is it measured?

Ch. 4

Why is a full angle (1 complete rotation) 360°?

This is a right triangle. In the right triangles the hypotenuse and a leg are congruent. The postulate is therefore HL.

Two sides and the included angle are given. The postulate is therefore SAS

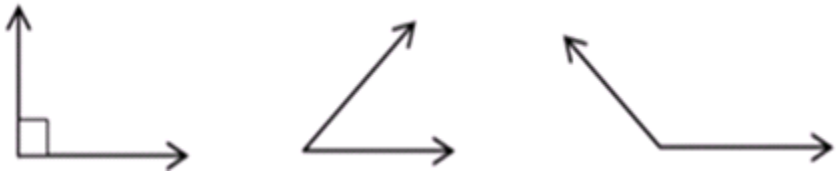
It comes from the Babylonians (Babylon is an ancient city of Mesopotamia in existence from roughly 2300 B.C. to 100 B.C. located in present day Iraq)

The ancient Babylonians counted in base 60 (sexagesimal system) where as today we count in base 10 (decimal system) and much evidence towards the end of the Babylonian civilizations suggests it was how the Babylonians astronomically divided up their year into 360 days (a reasonable approximations in antiquity of 365.2422 days in a year) and it fit so very nicely into their base 60 system.

Why 12 months?
Why 24 hours?
Why 7 days?

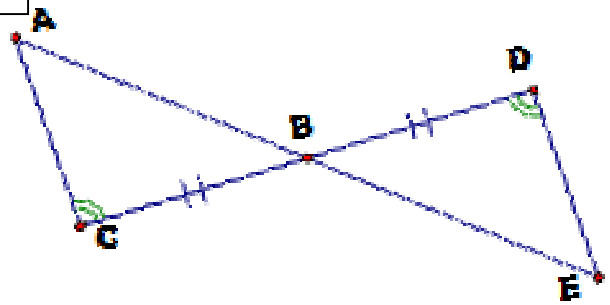
Why 60 seconds?
Why 60 minutes?

An angle is made up of two rays.



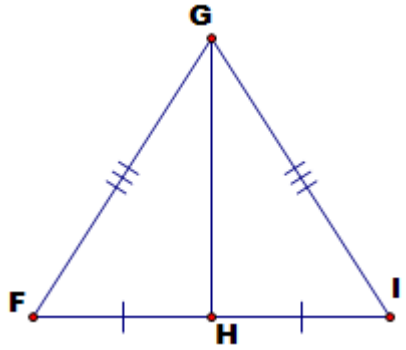
An angle is common measured in degrees using a protractor or compass.

Ch. 4.10



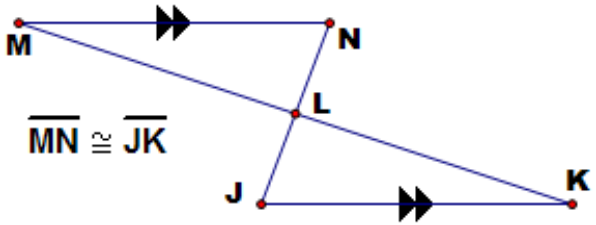
Which theorem proves triangle ABC is congruent to triangle EBD? (explain any missing congruent parts)

Ch. 4.8



Which theorem proves triangle FHG is congruent to triangle IHG? (explain any missing congruent parts)

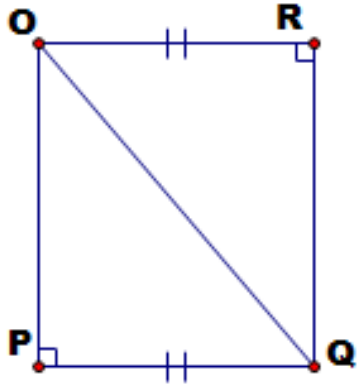
Ch. 4.10

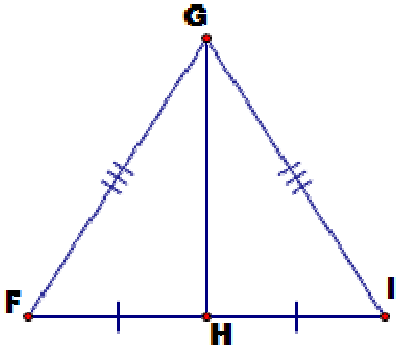


Which theorem proves triangle MNL is congruent to triangle KJL? (explain any missing congruent parts)

Ch. 4.9

Which theorem proves triangle ORQ is congruent to triangle QPO? (explain any missing congruent parts)

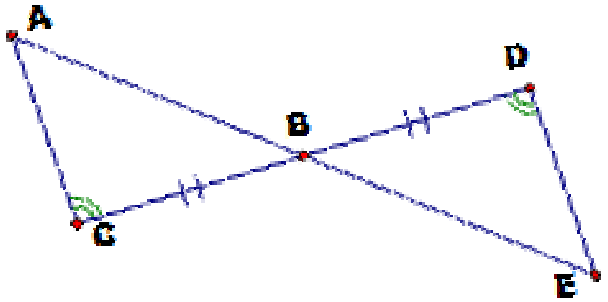




- $\overline{HG} \cong \overline{HG}$ **because of the reflexive property.**

So…..

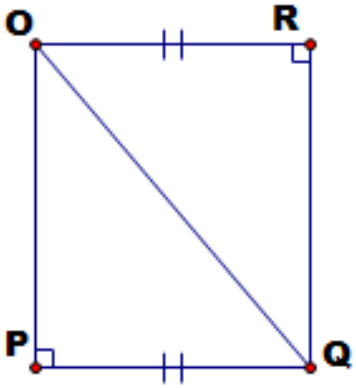
- **ΔFHG ≅ Δ IHG because of SSS.**



- **∠ABC ≅ ∠ DBE because vertical angles are congruent**

So…..

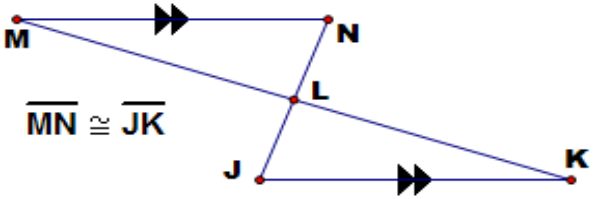
- **ΔABC ≅ Δ EBD because of SAS.**



- $\overline{OQ} \cong \overline{OQ}$ **because of the reflexive property.**

So…..

- **ΔORQ ≅ Δ QPO because of SSA or HL (which only works with right triangles).**



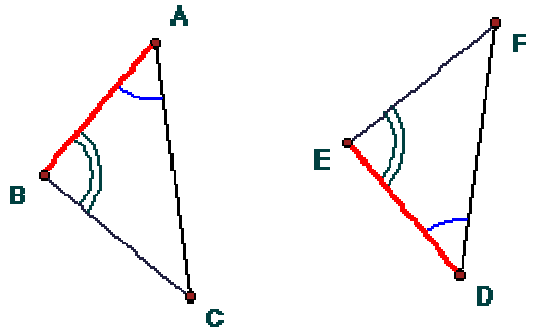
- **∠MNL ≅ ∠ KJL because alt. int. angles are congruent**
- **∠JKL ≅ ∠ NML because alt. int. angles are congruent**

So…..

- **ΔMNL ≅ Δ KJL because of ASA.**

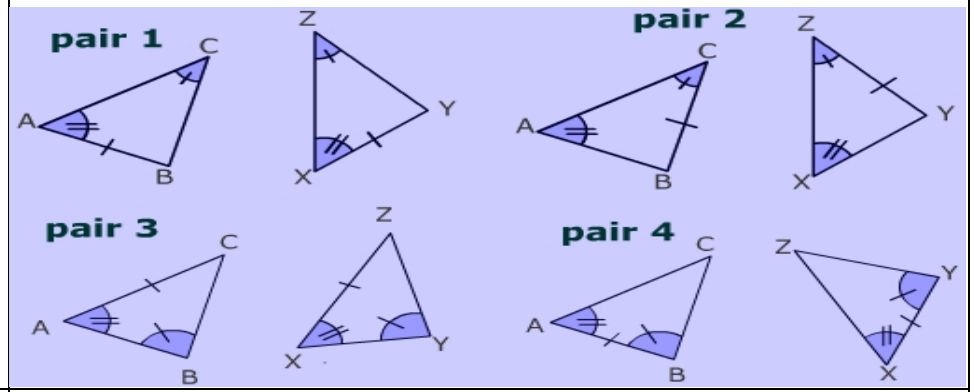
Ch. 4.10

Name the congruency postulate.



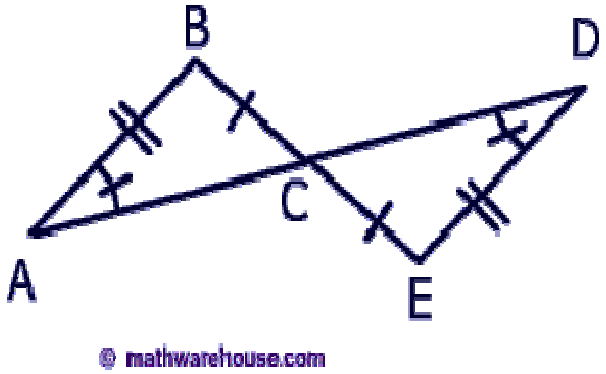
Ch. 4.10

In which pair of triangles pictured below could you use the Angle Side Angle postulate (ASA) **to prove the triangles are congruent?**



Ch. 4.10

Which congruency postulate could be used to prove that ΔBAC ≅ΔDEC?



Ch. 4.8 – 4.10

List all the congruency postulates.

In pair 4 the side is between the two angles. Therefore only in pair 4 can we use ASA as the congruency postulate.

The two triangles have two congruent triangles and one congruent side. The congruent is between the two angles. The congruency postulate is therefore ASA

For any pair of triangles the following are congruency postulates.
SSS, SAS, AAS, ASA

In any pair of right triangles we have the following postulates
HA, HL, and LL

You could use **Angle Angle Side** because ∠ACB and ∠DCE are **vertical angles**.

Ch. 5.3 – 5.4

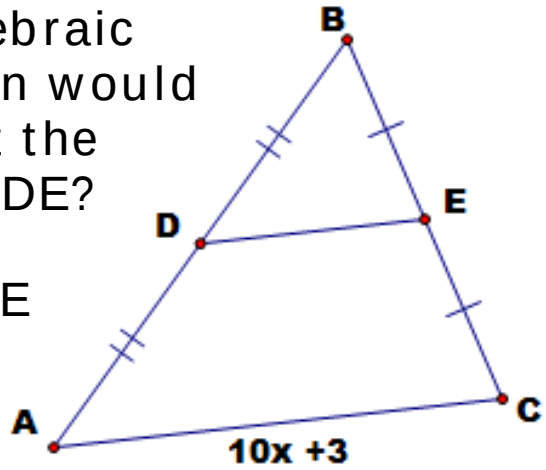
Define the following:

A) Angle Bisector
B) Altitude of a Triangle
C) Median of a Triangle

Ch. 5.1

If AC = 10x + 3, what algebraic expression would represent the length of DE?

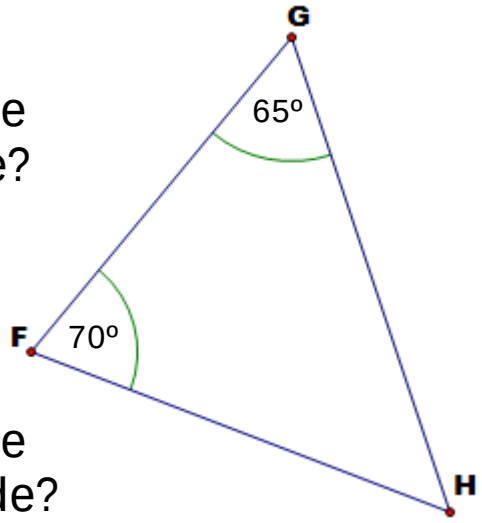
What is DE called?



Ch. 5.5

Which is the biggest side?

Which is the smallest side?



Ch. 5.5

If two sides of a triangle are 8 cm and 3 cm, then what is the range of values that the 3rd side could be?

Why is it not possible to have a triangle created with lengths 12cm, 5cm, and 6 cm?

If AC = 10x + 3, what algebraic expression would represent the length of DE?

- *DE = 5x + 1.5 b/c it should be half of the base*

What is DE called?

- *DE is called a mid-segment of the triangle. Any segment between two midpoints of the sides of a triangle is called a mid-segment. Mid-segments are ½ the length of the corresponding base to which they are also parallel.*

A. A line, segment, or ray that cuts an angle into 2 congruent adjacent angles.

B. A line, segment, or ray through an angle perpendicular to the opposite side.

C. A line, segment, or ray through an angle and the midpoint of the opposite side.

If two sides of a triangle are 8 cm and 3 cm, then what is the range of values that the 3rd side could be?

$$8 - 3 < x < 8 + 3$$

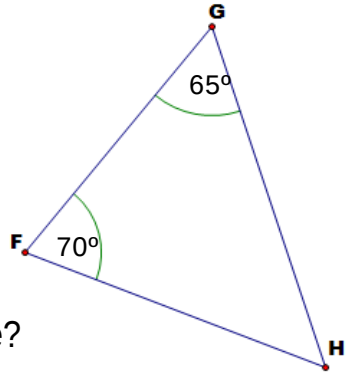
$$5 < x < 11$$

Why is it not possible to have a triangle created with lengths 12cm, 5cm, and 6 cm?

- If you add the sides 5 and 6 together, the maximum of the third side must be less than 11.

Which is the biggest side?

- HG because it is opposite the biggest angle

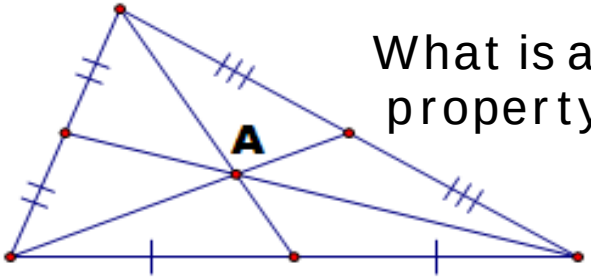


Which is the smallest side?

- FG because it is opposite the smallest angle

Ch. 5.4

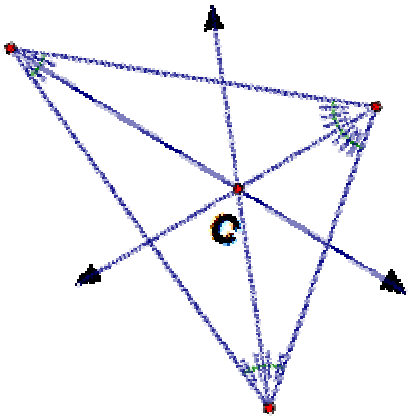
Name the center of the triangle shown at point A and what segments were used to create it.



What is a special property of this center?

Ch. 5.3

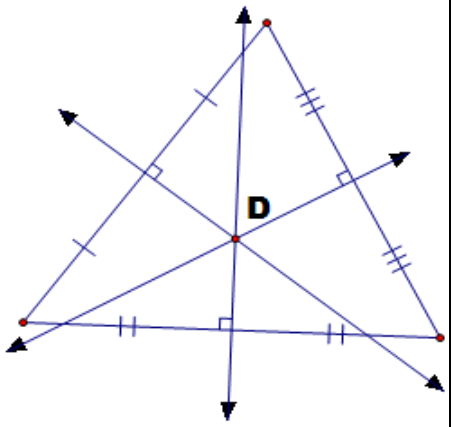
Name the center of the triangle shown at point C and the type of rays that were used to create it.



What is a special property of this center?

Ch. 5.2

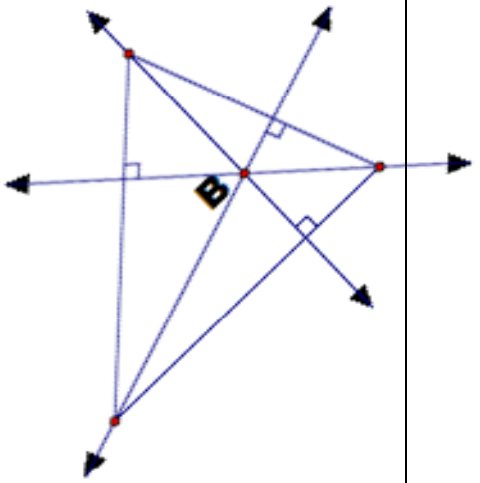
Name the center of the triangle shown at point D and what type of lines were used to create it.



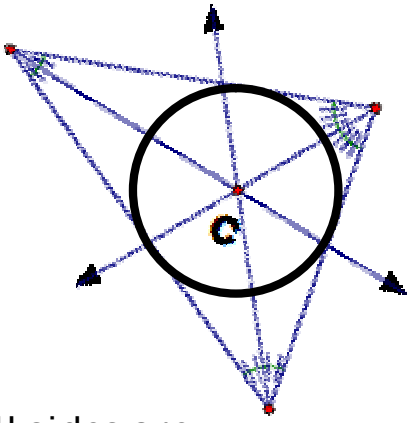
What is a special property of this center?

Ch. 5.4

Name the center of the triangle shown at point B and what type of lines were used to create it.



It is the INCENTER created by the ANGLE BISECTORS



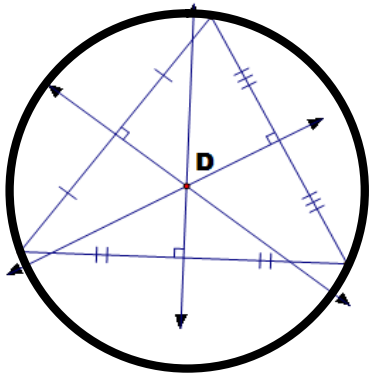
It is the point that all sides are perpendicular and equidistant from and the center of a circle that is inscribed inside the triangle.

It is the CENTROID created by the MEDIANS.

It is the center of gravity of the triangle.

It is the ORTHOCENTER and it is created by the ALTITUDES of the triangle.

It is the CIRCUMCENTER and it is created by the PERPENDICULAR BISECTORS



It is the point that is equidistant from all of the triangle's vertices and the center of a circle that circumscribes the triangle.

Ch. 5.7

What makes a polygon regular?

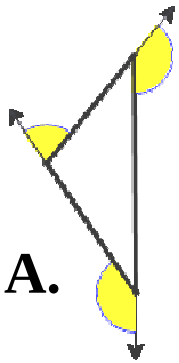
Ch. 5.7

What is the difference between CONCAVE and CONVEX?

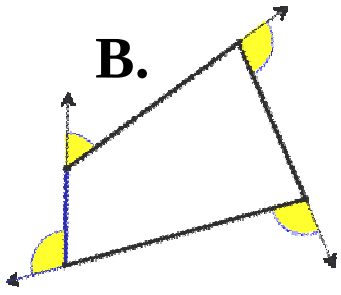
Ch. 5.7

What is the sum of the exterior angles of each convex polygon shown below?

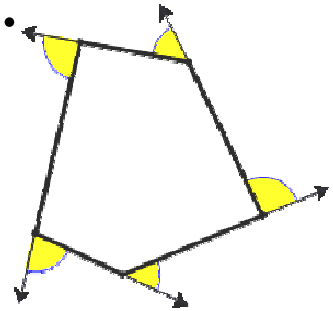
A.



B.

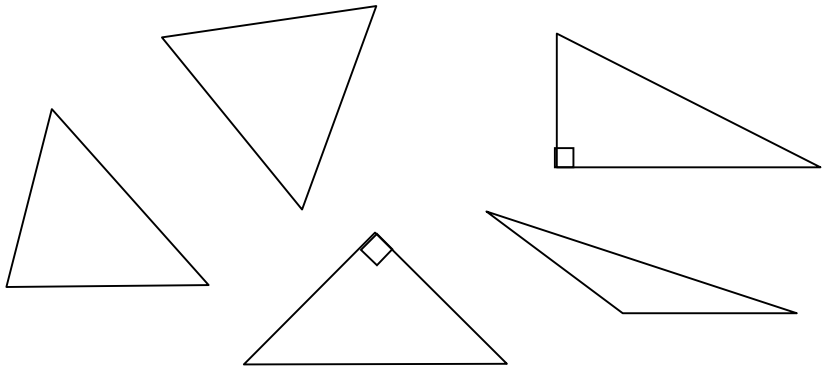


C.

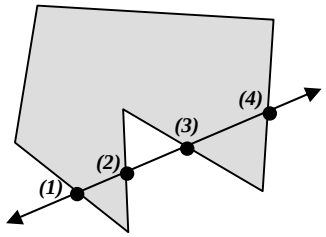


Ch. 5

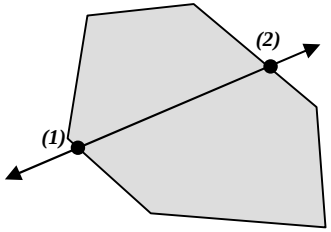
For which of the following triangles will the formula $a^2 + b^2 = c^2$ work correctly?



Concave describes a shape that has a ‘indentation’ in it. More specifically, if a line is able to intersect the edges of a polygon 4 times or more it is concave. (An easy way to remember, if the shape makes a ‘Cave’ then it is concave)

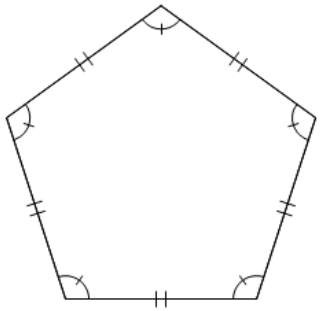


Convex describes a shape that has no indentations. Any line passing through the polygon will intersect the polygon edges no more than twice.

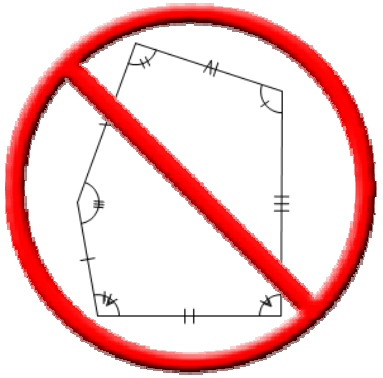


ALL SIDES CONGRUENT

ALL ANGLES CONGRUENT

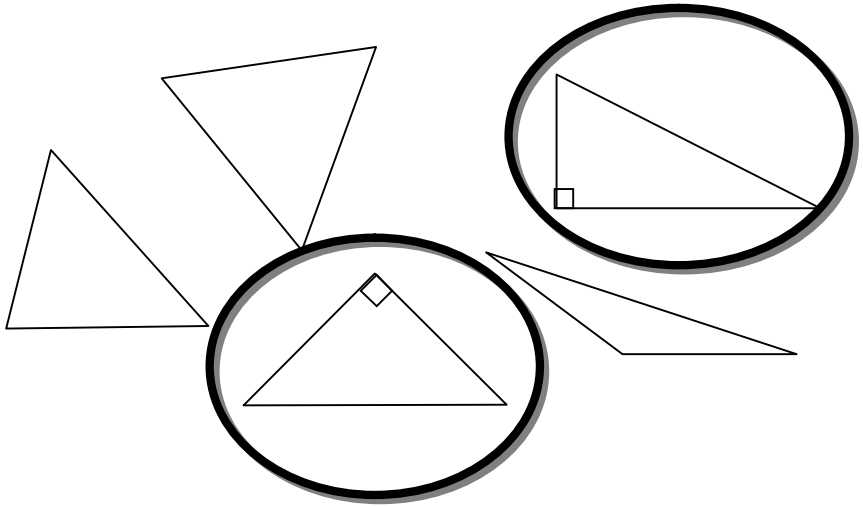


REGULAR



IRREGULAR

The triangles must be right triangles.



A. 360º

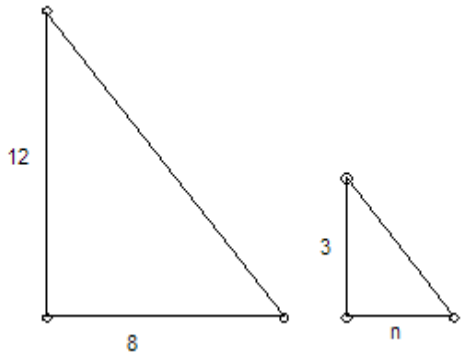
B. 360º

C. 360º

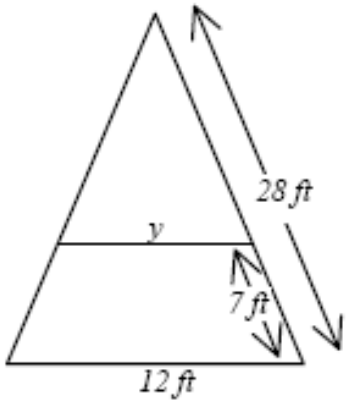
Ch. 5

Using ratios and assuming the figures are similar find the unknown side.

A.



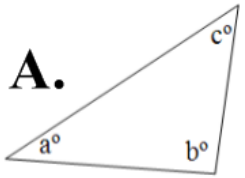
B.



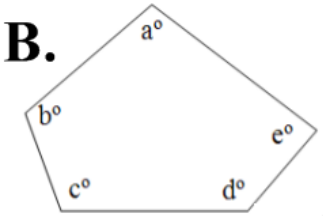
Ch. 5.7

12. What is the sum of the interior angles of each polygon?

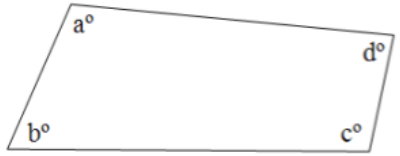
A.



B.



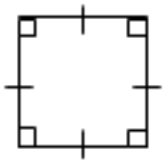
C.



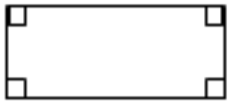
Ch. 5.8-5.12

10. Describe Each of the following Quadrillaterals.

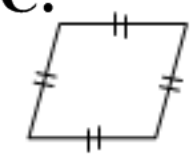
A.



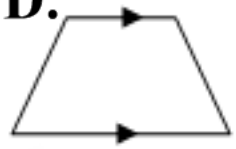
B.



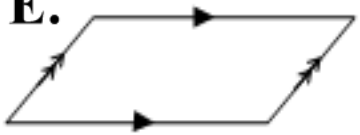
C.



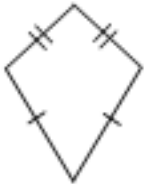
D.



E.



F.



Ch. 5.7

What is the name of each polygon?

A.

B.

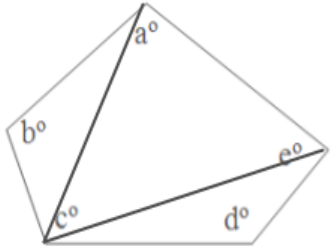
C.

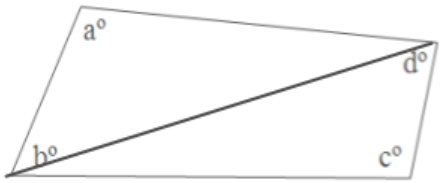
D.

A. 180°

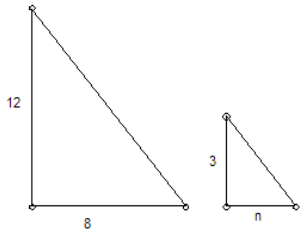
B. 540°

C. 360°





A.

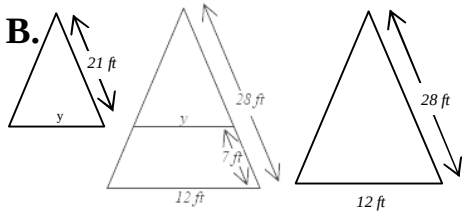


$$\frac{big\ \Delta}{small\ \Delta} : \frac{12}{3} \times \frac{8}{n}$$

$$24 = 12n$$

$$\boxed{2 = n}$$

B.



$$\frac{big\ \Delta}{small\ \Delta} : \frac{28}{21} \times \frac{12}{y}$$

$$252 = 28y$$

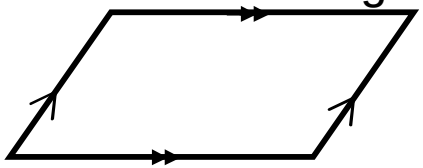
$$\boxed{9 = y}$$

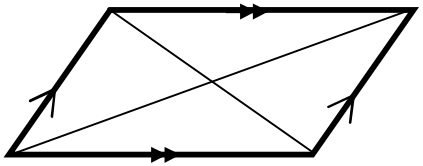
A. Pentagon (PENTA -5)
B. Hexagon (HEXA - 6)
C. Heptagon (HEPTA - 7)
D. Octagon (OCTA - 8)

A. Square- all equal sides, all right angles
B. Rectangle - all right angles
C. Rhombus - all equal sides
D. Trapezoid - only 1 set of parallel sides
E. Parallelogram - 2 sets of parallel sides
F. Kite - 2 sets of consecutive congruent sides

Ch. 5.8-5.9

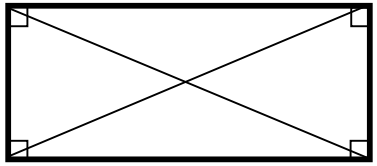
Name all of the properties of a parallelogram and its diagonals.





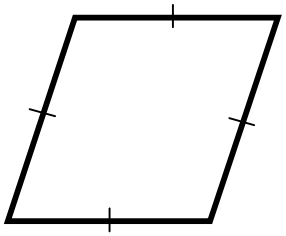
Ch. 5.10

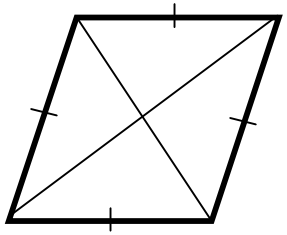
Name all of the properties of a rectangle and its diagonals.



Ch. 5.10

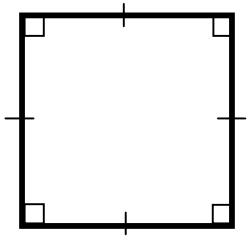
Name all of the properties of a rhombus and its diagonals.

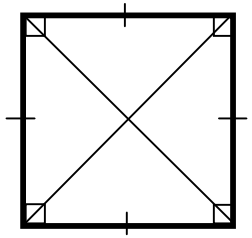




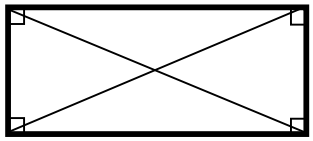
Ch. 5.10

Name all of the properties of a square and its diagonals.



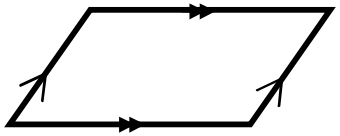


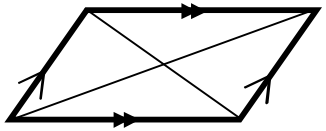
Name all of the properties of a rectangle and its diagonals.



1. All angles are right
2. Opposite Sides are parallel
3. Opposite Sides are congruent
4. Diagonals bisect each other
5. Diagonals are congruent

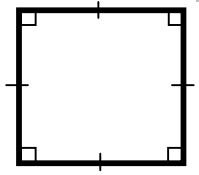
Name all of the properties of a parallelogram and its diagonals.

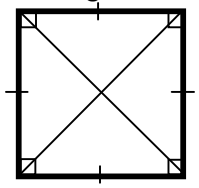




4. Opposite Sides are parallel
5. Opposite Sides are congruent
6. Opposite Angles are congruent
7. Consecutive Angles are supplementary
6. Diagonals bisect each other

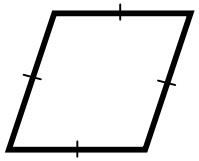
Name all of the properties of a square and its diagonals.

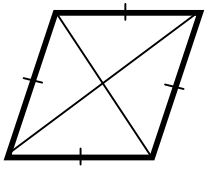




5. All angles are right
6. Opposite Sides are parallel
7. All Sides are congruent
1. Diagonals bisect each other
2. Diagonals are perpendicular
3. Diagonals bisect angles
4. Diagonals are congruent

Name all of the properties of a rhombus and its diagonals.

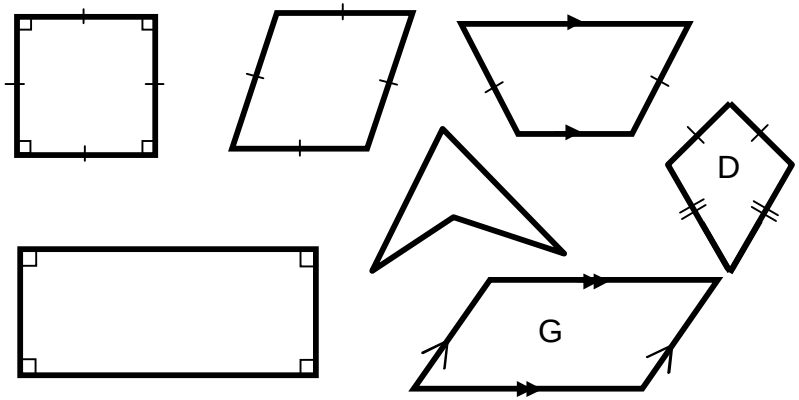




4. Opposite angles are congruent
5. Opposite Sides are parallel
6. All Sides are congruent
7. Consecutive angles are supplementary
1. Diagonals bisect each other
2. Diagonals are perpendicular
3. Diagonals bisect angles

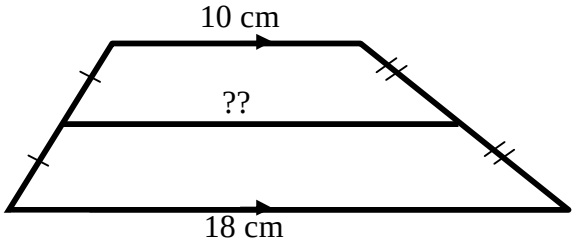
Ch. 5.8 – 5.12

Describe each quadrilateral as many ways as you can.



Ch. 5.11

Find the mid-segment of the trapezoid.



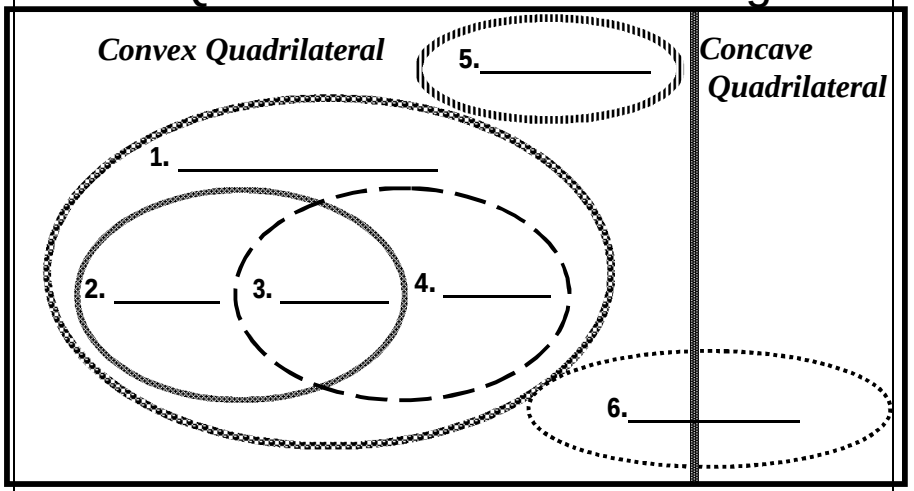
Ch. 5.8 – 5.12

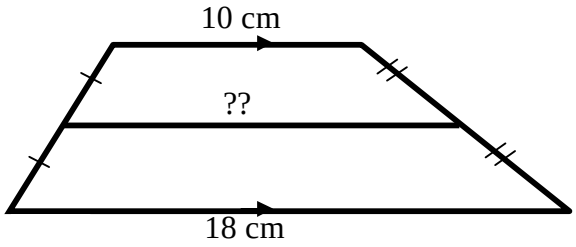
Always True, Sometime True or Never True

_____1. A rectangle is a parallelogram.
_____2. A rhombus is a rectangle.
_____3. A rectangle is a square.
_____4. A kite is a parallelogram.
_____5. A trapezoid is a rectangle.
_____6. A square is a rectangle.
_____7. A rectangle is concave.
_____8. An isosceles trapezoid has 3 congruent sides.
_____9. An isosceles trapezoid has supplementary opposite angles.
_____10. A rhombus has congruent diagonals
_____11. A parallelogram's diagonals bisect each other.

Ch. 5.8 – 5.12

Fill in the Blanks of the Quadrilateral Venn Diagram

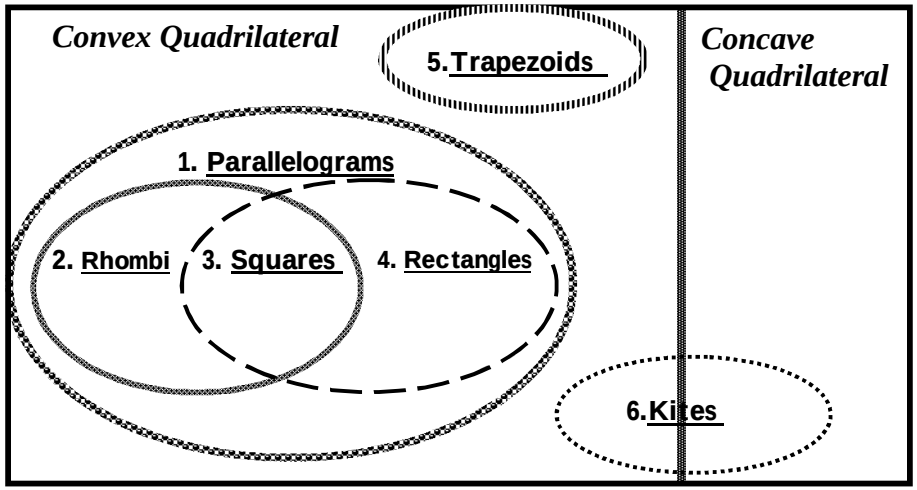




$$\frac{10+18}{2}=\frac{28}{2}=14$$

A	B	C	D	E
Square	**Rhombus**	**Isosceles Trapezoid**	**Kite**	**Rectangle**
Rectangle Rhombus Parallelogram Convex Quadrilateral	Parallelogram Convex Quadrilateral	Convex Quadrilateral	Convex Quadrilateral	Parallelogram Convex Quadrilateral

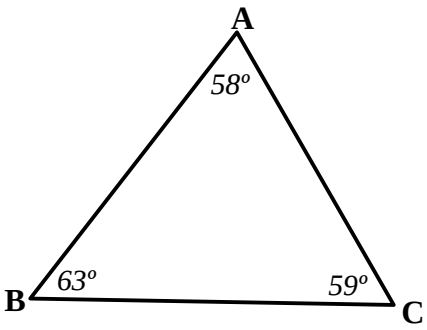
F	G
Concave Quadrilateral	**Parallelogram**
	Quadrilateral



A **13.** A rectangle is a parallelogram.
S **14.** A rhombus is a rectangle.
S **15.** A rectangle is a square.
N **16.** A kite is a parallelogram.
N **17.** A trapezoid is a rectangle.
A **18.** A square is a rectangle.
N **19.** A rectangle is concave.
S **20.** An isosceles trapezoid has 3 congruent sides.
A **21.** An isosceles trapezoid has supplementary opposite angles.
S **22.** A rhombus has congruent diagonals
A **23.** A parallelogram's diagonals bisect each other.
A **24.** A quadrilateral's interior angles sum to 360º.

Unit 5 – Triangle Inequality Theorem

Which side of the triangle below should be the **largest** and why? (Base you decision on the provided angle measures)



Which side of the triangle below should be the **smallest** and why? (Base you decision on the provided angle measures)

Unit 5 – Exterior Inequality Triangle Theorem

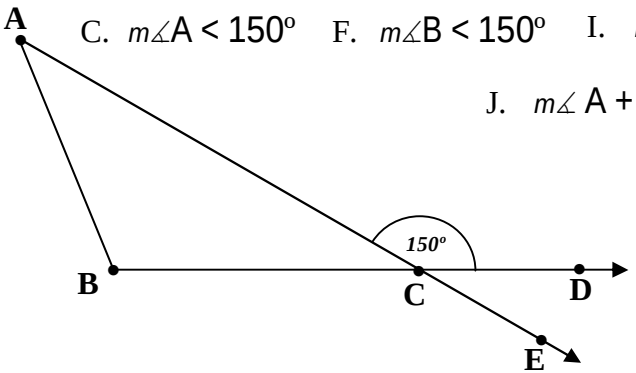
Based on the diagram shown below, tell which of the following statements must be true and which might be false.

A. $m\angle A = 150^o$ D. $m\angle B = 150^o$ G. $m\angle ACB = 150^o$

B. $m\angle A > 150^o$ E. $m\angle B > 150^o$ H. $m\angle ACB = 30^o$

C. $m\angle A < 150^o$ F. $m\angle B < 150^o$ I. $m\angle A + m\angle B = 150^o$

J. $m\angle A + m\angle ACB = 150^o$



Unit 6 – Mutually Exclusive & Inclusive Events

EXTRA: What's the probability of Event 1 OR Event 2?

Which of the following pairs of events are **Mutually Exclusive** and which are **Inclusive**?

A. Event 1: Rolling a standard 6 sided number cube to an even number.
Event 2: Rolling the same number cube to an odd number.

B. A Backpack has a red math book, blue science book, red language arts book, and a green social studies book.
Event 1: Randomly picking a red book out of the backpack.
Event 2: Randomly picking a math book out of the same backpack.

C. Event 1: Randomly selecting a red card from a standard deck of 52 cards.
Event 2: Randomly selecting a face card from the same standard deck of cards.

Unit 6 – Independent & Dependent Events

EXTRA: What's the probability of Event 1 AND Event 2?

Which of the following pairs of events are **Independent** and which are **Dependent**?

A. Event 1: Rolling a white standard 6 sided number cube to the number 2
Event 2: Rolling a red standard 6 sided number cube to an odd number.

B. A bag contains 4 blue marbles and 2 white marbles.
Event 1: Randomly picking a white marble out of the bag first and discarding it (i.e. not replacing it)
Event 2: Randomly picking a blue marble out of the bag second

C. Event 1: Randomly selecting a face card from a standard deck of 52 cards on the first draw and discarding it.
Event 2: Randomly selecting a face card from a standard deck of 52 cards on the second draw.

This is known because the sum of the interior angles of a triangle sum to 180°

This is known because the angles form a linear pair (i.e. a straight line) and sum to 180°

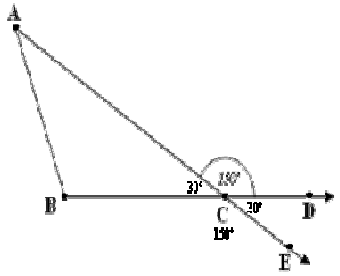
$m\angle A + m\angle B + m\angle ACB = 180^\circ$ and $180^\circ = m\angle ACD + m\angle ACB$

Since both equations are equal to 180° then, by transitivity:

$$m\angle A + m\angle B + m\angle ACB = m\angle ACD + m\angle ACB$$

$$m\angle A + m\angle B + \cancel{m\angle ACB} = m\angle ACD + \cancel{m\angle ACB}$$

$$m\angle A + m\angle B = m\angle ACD = 150^\circ$$



~~A. $m\angle A = 150^\circ$~~ ~~D. $m\angle B = 150^\circ$~~ ~~G. $m\angle ACB = 150^\circ$~~

~~B. $m\angle A > 150^\circ$~~ ~~E. $m\angle B > 150^\circ$~~ H. $m\angle ACB = 30^\circ$

C. $m\angle A < 150^\circ$ F. $m\angle B < 150^\circ$ I. $m\angle A + m\angle B = 150^\circ$

~~J. $m\angle A + m\angle ACB = 150^\circ$~~

***Boxed ones must be true and crossed through statements might be false.*

A. Event 1: Rolling a white standard 6 sided number cube to the number 2
Event 2: Rolling a red standard 6 sided number cube to an odd number.
INDEPENDENT because Event 2's outcome is not affected by Event 1.

EXTRA: $P(E1 \text{ and } E2) = \frac{1}{6}\cdot\frac{3}{6} = \frac{3}{36} = \frac{1}{12}$

B. A bag contains 4 blue marbles and 2 white marbles.
Event 1: Randomly picking a white marble out of the bag first and discarding it (i.e. not replacing it)
Event 2: Randomly picking a blue marble out of the bag second

DEPENDENT because Event 2's outcome is affected by Event 1.

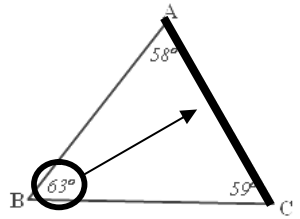
EXTRA: $P(E1 \text{ and } E2) = \frac{2}{6}\cdot\frac{4}{5} = \frac{8}{30} = \frac{4}{15}$

C. Event 1: Randomly selecting a face card from a standard deck of 52 cards on the first draw and discarding it.
Event 2: Randomly selecting a face card from a standard deck of 52 cards on the second draw.
DEPENDENT because Event 2's outcome is affected by Event 1.

EXTRA: $P(E1 \text{ and } E2) = \frac{12}{52}\cdot\frac{11}{51} = \frac{132}{2652} = \frac{11}{221}$

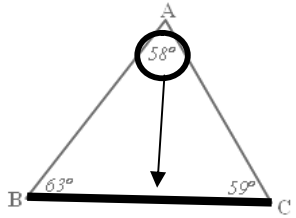
*Which side of the triangle below should be the **largest** and why? (Base you decision on the provided angle measures)*

The **largest** side should be side $\overline{AC}$ because it is opposite the largest angle.

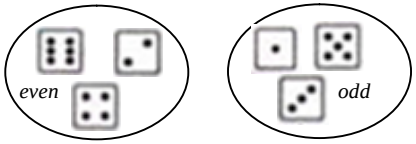


*Which side of the triangle below should be the **smallest** and why? (Base you decision on the provided angle measures)*

The **smallest** side should be side $\overline{BC}$ because it is opposite the smallest angle.



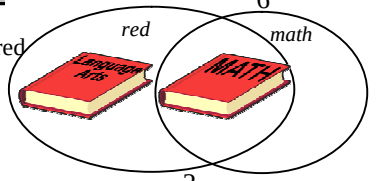
A. Event 1: Rolling a standard 6 sided number cube to an even number.
Event 2: Rolling the same number cube to an odd number.



NO "OVERLAP" thus MUTUALLY EXCLUSIVE

EXTRA: $P(E1 \text{ or } E2) = \frac{6}{6} = 100\%$

B. A Backpack has a red math book, blue science book, red language arts book, and a green social studies book.
Event 1: Randomly picking a red book out of the backpack.
Event 2: Randomly picking a math book out of the same backpack.

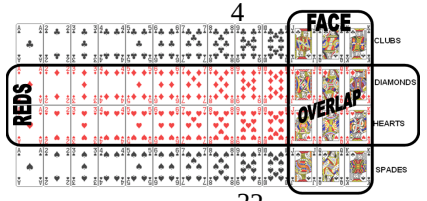


"OVERLAP" thus INCLUSIVE

EXTRA: $P(E1 \text{ or } E2) = \frac{2}{4} = 50\%$

C. Event 1: Randomly selecting a red card from a standard deck of 52 cards.
Event 2: Randomly selecting a face card from the same standard deck of cards.

"OVERLAP" thus INCLUSIVE



EXTRA: $P(E1 \text{ or } E2) = \frac{32}{52} = 61.5\%$

Ch. 6.1

At a banquet, a person has a choice of three types of drinks (tea, water, soda). They have a choice of two salads (House, Caesar). They have a choice of 2 main entrées (chicken, beef). Create a TREE DIAGRAM showing all of the possible meals.

Ch. 6.1

What is the probability of flipping 3 coins and having all of them land on tails?

What is the probability of flipping 3 coins and having two coins land on heads? (hint: create a tree diagram and count them)

Ch. 6

Which of the following demonstrates how to find RANGE, MEAN, MEDIAN, and MODE for the data set { 3, 8, 11, 3, 15}?

A. $\underline{3},8,11,\underline{3},15$

B. ~~3, 3,~~ (8) ~~, 11, 15~~

C. $\dfrac{3+8+11+3+15}{5}$

D. $15-3$

Ch. 6.2 – 6.3

Define/Describe:

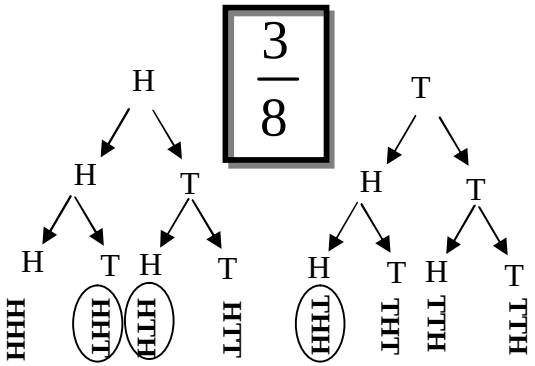
A. Permutation

B. Combination

What is the probability of flipping 3 coins and having all of them land on tails?

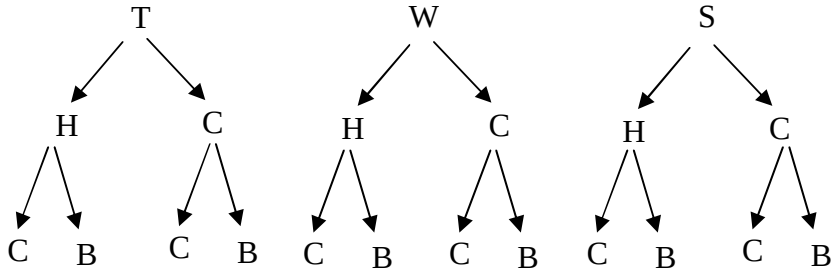
$\frac{1}{8}$

What is the probability of flipping 3 coins and having two coins land on heads? (hint: create a tree diagram and count them)



$\frac{3}{8}$

At a banquet, a person has a choice of three types of drinks (tea, water, soda). They have a choice of two salads (House, Ceaser). They have a choice of 2 main entrées (chicken, beef). Create a TREE DIAGRAM showing all of the possible meals.



A. Permutation: order matters!

$${}_nP_r = \frac{n!}{(n-r)!}$$ (more possibilities)

B. Combination: order does not matter!

$${}_nC_r = \frac{n!}{r!(n-r)!}$$

A. 3, 8, 11, 3, 15

MODE

B. ~~3, 3,~~ (8) ~~, 11, 15~~

MEDIAN

C. $\frac{3+8+11+3+15}{5}$

MEAN

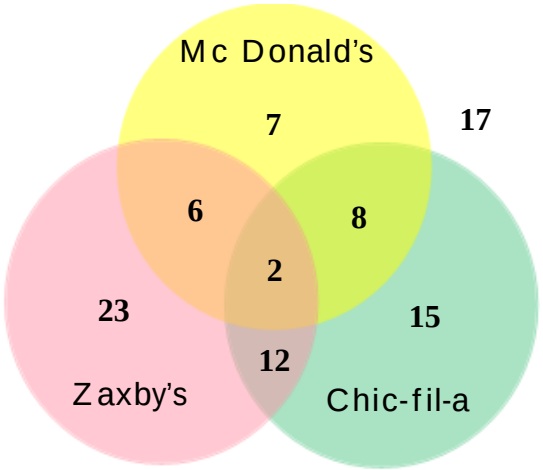
D. $15-3$

RANGE

Ch. 6.4

Use the following VENN diagram that shows where a surveyed group of students ate over the last week.

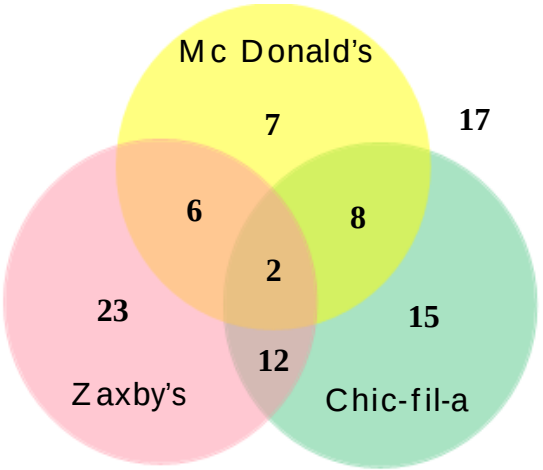
How many students ate at Chic-fil-a last week?



Ch. 6.4

Use the following VENN diagram that shows where a surveyed group of students ate over the last week.

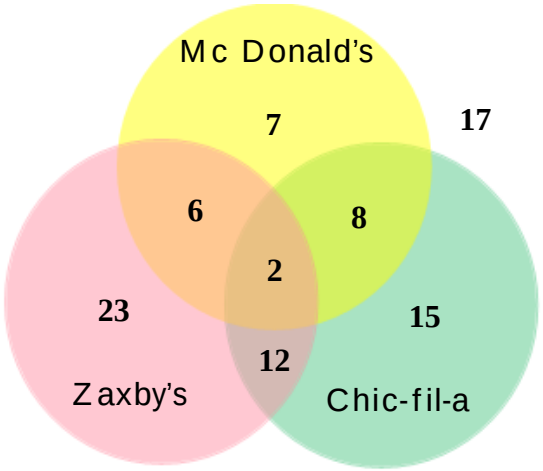
How many students ate at Zaxby's **and** Mc Donald's?



Ch. 6.4

Use the following VENN diagram that shows where a surveyed group of students ate over the last week.

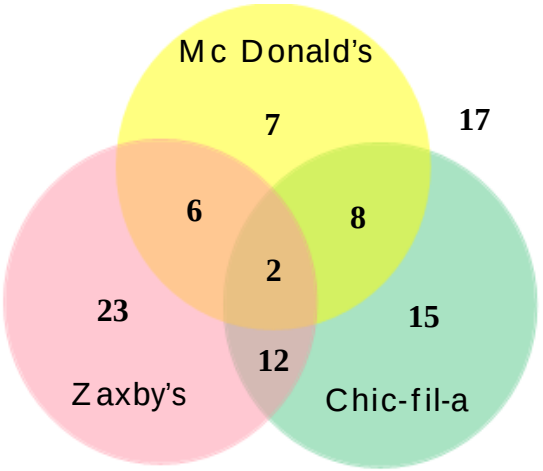
How many students ate at Chic-fil-a **or** Mc Donald's?



Ch. 6.4

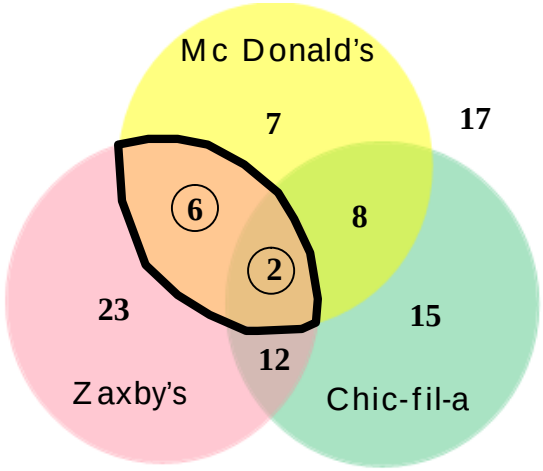
Use the following VENN diagram that shows where a surveyed group of students ate over the last week.

How many students ate at Chic-fil-a, Mc Donald's, **and** Zaxby's?



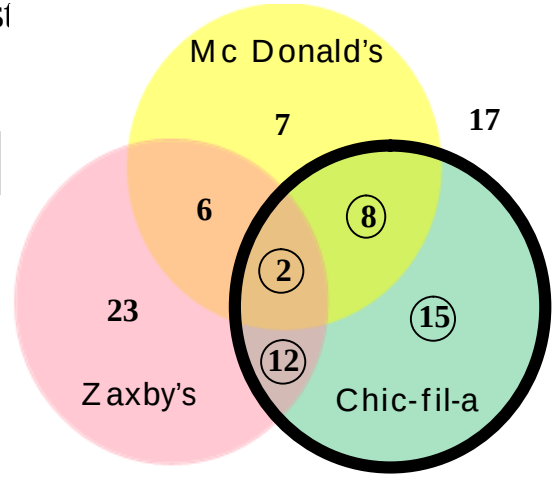
How many students ate at Zaxby's **and** Mc Donald's?

6 + 2 = 8



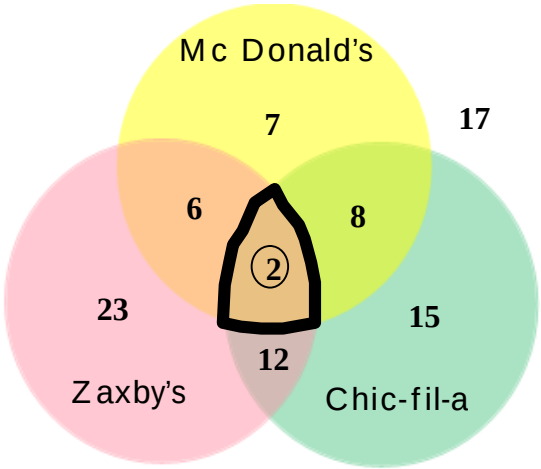
How many students ate at Chic-fil-a last week?

2+8+12+15 = 37



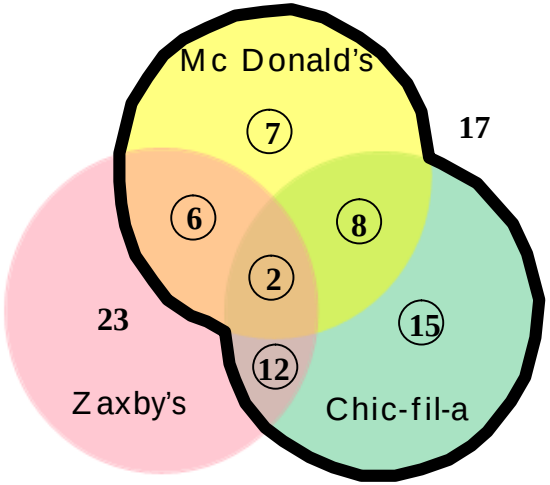
How many students ate at Chic-fil-a, Mc Donald's, **and** Zaxby's?

2



How many students ate at Chic-fil-a **or** Mc Donald's?

7+6+2+8+12+15= 50



Ch. 6.1

In a Valentine's box of candy there were 4 strawberry, 5 orange, and 3 lemon chocolate covered creams. If they all look identical what is the probability of picking one and getting a lemon flavored chocolate?

Ch. 6.5

What is the Expected Value:
The school is having a raffle. Each ticket costs $2.00 and the prize is an IPod worth $100. If the school sells 1000 tickets, what is the expected value of you winning?

Ch. 6.6

A) What is random sampling?

B) How can random sampling result in a biased sample?

Ch. 6.7

A) What is a deviation in a data set?

B) What is the deviation for 7 in the given data set?

1, 1, 2, 4, 4, 5, 7, 8

The sum of the products of each event and its corresponding probability.
Winning: $98 Losing: -$2

$$98\left(\frac{1}{1000}\right)+{}^{-}2\left(\frac{999}{1000}\right)={}^{-}\$1.90$$

You would expect to lose $1.90 for each ticket you bought!

A) The distance a data point is from the mean.

B) The deviation for 7 is 3.

$$\text{Mean}=\frac{1+1+2+4+4+5+7+8}{8}=4$$

$7-4=3$ units from the mean

In a Valentine's box of candy there were 4 strawberry, 5 orange, and 3 lemon chocolate covered creams. If they all look identical what is the probability of picking one and getting a lemon flavored chocolate?

$$\frac{\textit{Desired \#}}{\textit{Total \#}}:\frac{\textit{Lemon}}{\textit{Total}}=\frac{3}{12}=\frac{1}{4}=0.25=25\%$$

A) Every member of the population has an equal chance of being selected.

B) Example of possible answers:

In a survey about the entire school. Randomly surveying students who are leaving math classrooms.
Excludes the population of students not taking math classes.

Unit 6 – Conditional Probability

A. Given that there are a total of 20 students in a mathematics classroom. 12 are males and 8 are female students. A student in the class is randomly selected to win piece of candy. The teacher draws a name and says that it is a Girl's name.
- Knowing this extra information, what is the probability that a student from the class named Emily has won the prize?
- Knowing this extra information, what is the probability that a student from the class named Chuck has won the prize?

B. A single standard number cube is rolled. Determine:
- P(6 | the outcome is even)
- P(the outcome is odd | the outcome is greater than 3)

C. A single random card is drawn from a standard deck of 52 cards.
- P(Queen | Face Card)
- P(8 of hearts | Red Card)

Unit 6 – Median & Quartiles

What is the Q_1 , the Median, and Q_3 for the following data sets? (Extra: Interquartile Range)

A. 5, 8, 10, 15, 16, 22, 30

B. 22, 30, 44, 61, 65, 70, 77, 80, 90

C. 15, 20, 22, 30

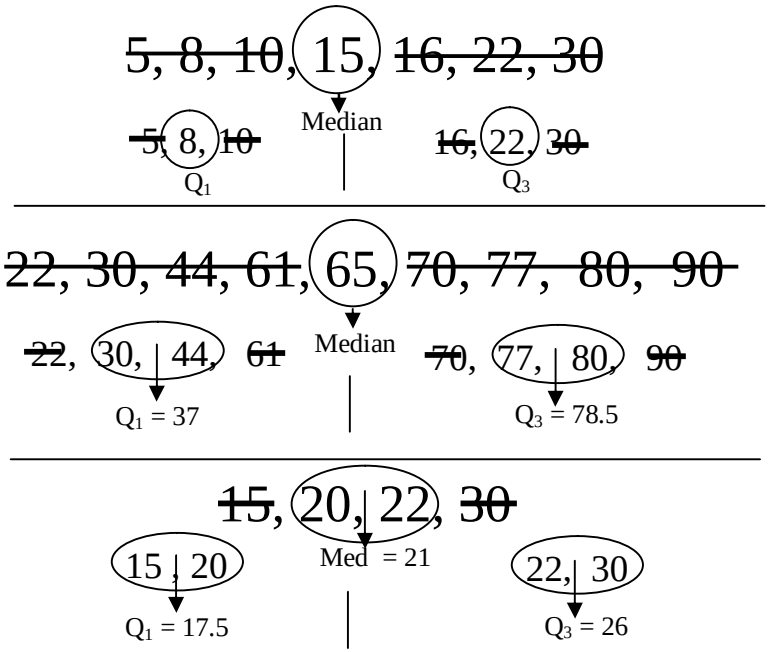
Unit 6 – Mean Deviation

A. Explain what Mean Deviation Measures.

B. Given that $\bar{x} = 10$ for the following data set, explain how to calculate the mean deviation.

DATA	???	???
13		
9		
7		
11		

Line the numbers up from least to greatest (if not already done).
The **median** is the middle number.
Q_1 is the median of the first ½ of the data.
Q_3 is the median of the second ½ of the data



A.
- *Knowing this extra information, what is the probability that a student from the class named Emily has won the prize?*

Assuming Emily is a girl and we know the winner is a girl. Then, the probability of her still winning is ⅛

- *Knowing this extra information, what is the probability that a student from the class named Chuck has won the prize?*

Assuming Chuck is a boy and we know the winner is a girl. Then, the probability of him winning is 0 (i.e. he can't be the winner)

B.
- *P(6 | the outcome is even)*

Assuming we know the outcome is an even number then it must be either 2,4,6. So, the probability of it being 6 is ⅓.

- *P(the outcome is odd | the outcome is greater than 3)*

Assuming we know the outcome is greater than 3 then it must be either 4,5,6. So, the probability of it being odd is ⅓.

- *P(Queen | Face Card)*

Assuming we know the outcome is a face card then it must be one of 12 possible cards. So, the probability of it being odd is ⅓.

- *P(8 of hearts | Red Card) = 1/24 = 4.2%*

A. Explain what Mean Deviation Measures.

Mean Deviation is a measure of variability (or spread). Specifically, it is the average of the distances that each data point is away from the mean.

B. Given that $\bar{x} = 10$ for the following data set, explain how to calculate the mean deviation.

DATA	DIFFERENCES	ABS. Value
13	13 – 10 = **3**	|3| = **3**
9	9 – 10 = **– 1**	|– 1| = **1**
7	7 – 10 = **– 3**	|– 3| = **3**
11	11 – 10 = **1**	|–1| = **1**

$$\text{Mean Deviation} = \frac{3+1+3+1}{4}$$

$$\text{Mean Deviation} = 2$$