Station 1

Jay wants to throw the football to Peyton. As the coach figures out the play using a coordinate map, Jay is at $(\overset{x_1}{1},\overset{y_1}{4})$ and Peyton is at $(\overset{x_2}{3},\overset{y_2}{9})$. How many feet, to the nearest tenth, does the football travel?

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

$$d=\sqrt{(3-1)^2+(9-4)^2}$$

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

$$d=\sqrt{4+25}$$

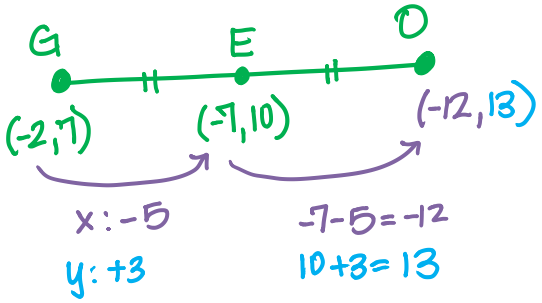
$$d=\sqrt{29}\approx 5.4 \text{ feet}$$

About 5.4 feet

(Chapter 1)

Station 2

E is the midpoint of segment GO. If G(-2, 7) and E(-7, 10), find the coordinates of O.



O (-12,13)

(Chapter 1)

Station 3

Determine if the statement is true or false. If FALSE, find a counterexample:

If $x^2 = 64$, then $x = 8$.

False. Let $x = -8$.

(Chapter 2)

Station 4

Use the Law of Syllogism (Chain of Reasoning) to draw a conclusion.

If her mom is happy, then Sally goes to bed early. If Sally eats an apple, then her mom will be happy. If Sally goes to bed early, then she will not get sick.

h b a

h b ~s

$h \to b$
$a \to h$
$b \to \sim s$

rearrange

$a \to h$
$h \to b$
$b \to \sim s$

conclusion

$a \to \sim s$

Conclusion: If Sally eats an apple, then she will not get sick!

(Chapter 2)

Station 5

The measure of an angle is 6 more than twice the measure of the supplement. Find the measure of the supplement of the angle.

$x = 2(180 - x) + 6$

$x = 360 - 2x + 6$

$3x = 366$

$x = 122$

measure of supplement

$180 - 122 = 58°$

58°

(Chapter 2)

Station 6

For the given conditional statement, write the following statements and determine if it is true or false:

Conditional Statement: **If two angles are supplementary, then they are congruent.** ***F***

a) **Converse Statement:** ***If two angles are congruent, then they are supplementary. F***

b) **Inverse Statement:** ***If two angles are NOT supplementary, then they are NOT congruent. F***

c) **Contrapositive Statement:** ***If two angles are NOT congruent, then they are NOT supplementary. F***

d) **Biconditional Statement:** ***Two angles are supplementary if and only if they are congruent. F***

(Chapter 2)

Station 7

Given the following statements, what property do they justify?

a. $94° = 94°$ Reflexive Property

b. If ∠A is complementary to ∠B and ∠B ≅ ∠C, then ∠C is complementary to ∠B. Substitution Property

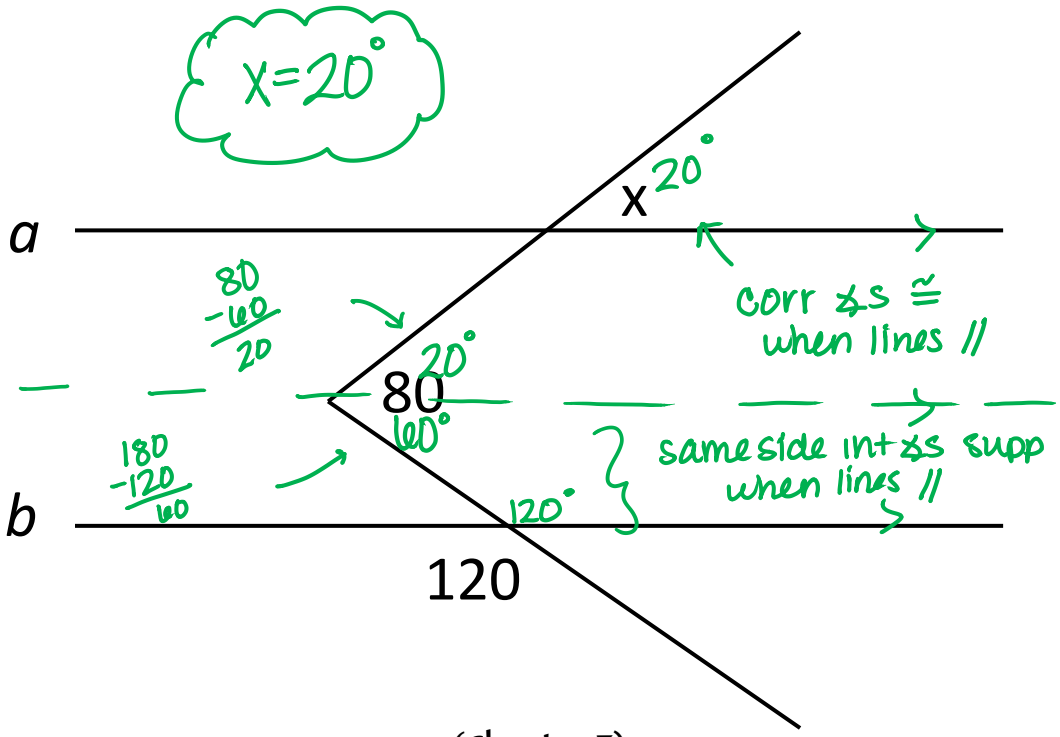
c. If ∠GEO ≅ ∠ALG and ∠ALG ≅ ∠MAT, then ∠GEO ≅ ∠MAT. Transitive Property

d. If ∠RED ≅ ∠DEV, then ∠DEV ≅ ∠RED. Symmetric Property

(Chapter 2)

Station 8

Given a||b. Find x.



(Chapter 3)

Station 9

* put into $y=mx+b$ to find m (slopes)

Are the lines parallel, perpendicular, or neither:

$$6x + 4y = 16 \text{ and } \frac{6y}{6} = \frac{-4x}{6} + \frac{6}{6}$$

$4y = -6x + 16$

$y = \frac{-6}{4}x + 4$

$y = \frac{-3}{2}x + 4$

$\boxed{m = \frac{-3}{2}}$

$y = \frac{-4}{6}x + 1$

$y = \frac{-2}{3}x + 1$

$\boxed{m = -2/3}$

Slopes are not the same nor opp. reciprocals

Neither

(Chapter 3)

Station 10

Using the diagram, correctly name the angles.

a. ∠2 and ∠3 Same Side Interior

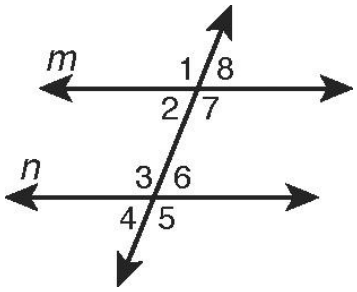
b. ∠4 and ∠8 Alternate Exterior

c. ∠2 and ∠4 Corresponding

d. ∠3 and ∠5 Vertical Angles

e. ∠5 and ∠8 Same Side Exterior

f. ∠3 and ∠7 Alternate Interior



(Chapter 4)

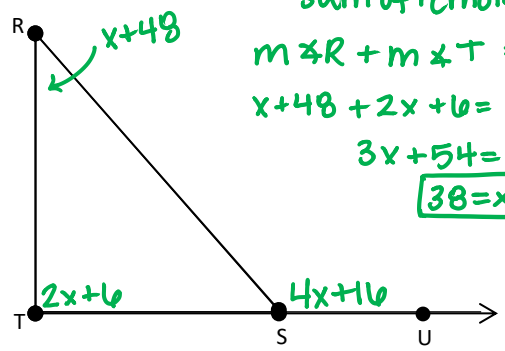
Station 11

Given : $\angle T = (2x+6)^\circ$

$\angle RSU = (4x+16)^\circ$

$\angle R = (x+48)^\circ$

Find: $m\angle T$



★Exterior ∡ Theorem★

Sum of remote int. ∡s = Ext ∡

$m\angle R + m\angle T = m\angle RSU$

$x+48+2x+6 = 4x+16$

$3x+54 = 4x+16$

$\boxed{38 = x}$

$m\angle T = 2x+6$

$= 2(38)+6$

$m\angle T = 82^\circ$

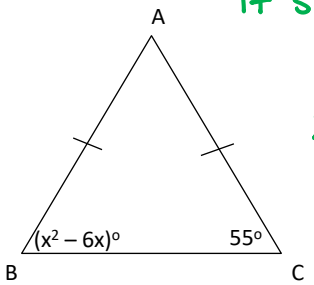
(Chapter 4)

Station 12

Given : $\overline{AB} \cong \overline{AC}$. Solve for x.

$x =$

$m\angle 1 =$



If sides of △ are ≅, then the base ∡s ≅.

$x^2 - 6x = 55$

$x^2 - 6x - 55 = 0$

$(x-11)(x+5) = 0$

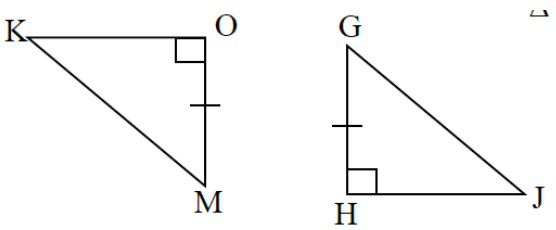
$x = 11, -5$

Did you check if both worked?! ☺

(Chapter 4)

Station 13

Identify the additional pair of corresponding sides or angles needed to support the method for proving triangles congruent.



by SAS $\overline{KO} \cong \overline{HJ}$

by ASA $\angle M \cong \angle G$

by HL $\overline{KM} \cong \overline{GJ}$

Name the congruent triangles: $\triangle MOK \cong \triangle GHJ$

(Chapter 4)

Station 14

Classify the triangle by its angle measures.

★ ∡'s of a △ sum to 180° ★

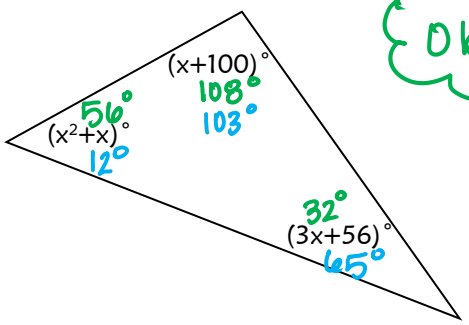
$x^2+x+x+100+3x+56=180$

$x^2+5x+156=180$

$x^2+5x-24=0$

$(x+8)(x-3)=0$

$\boxed{x=-8}$ $\boxed{x=3}$



Obtuse triangle

(Chapter 4)

Station 15

Given ABCD is a kite with $\overline{AB} \cong \overline{BC}$.

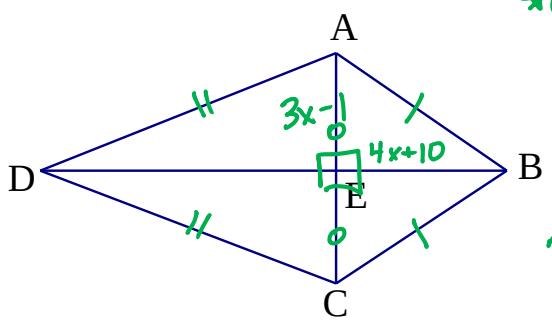
AE = 3x – 1 and ∠AEB = 4x + 10, what is AC?

★ Diags are ⊥ ★

$4x+10=90$

$4x=80$

$\boxed{x=20}$



★ One Diag is ⊥ bisector ★

$AE=3(20)-1$

$AE=59$

$AC=2(AE)$

$=2(59)$

$AC=118$

(Chapter 6)

Station 16

Given: ABCD is a rectangle, ∠1 = (10x - 16) and AE = 9x - 4.5

Find: AC.

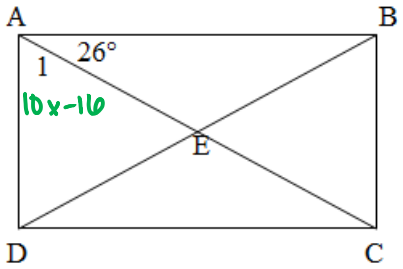
★ ∠'s = 90° ★

$10x-16+26=90$

$10x+10=90$

$10x=80$

$\boxed{x=8}$



★ Diags Bisect each other & ≅ ★

$AE=9(8)-4.5$

$AE=67.5$

$AC=2(AE)$

$AC=2(67.5)$

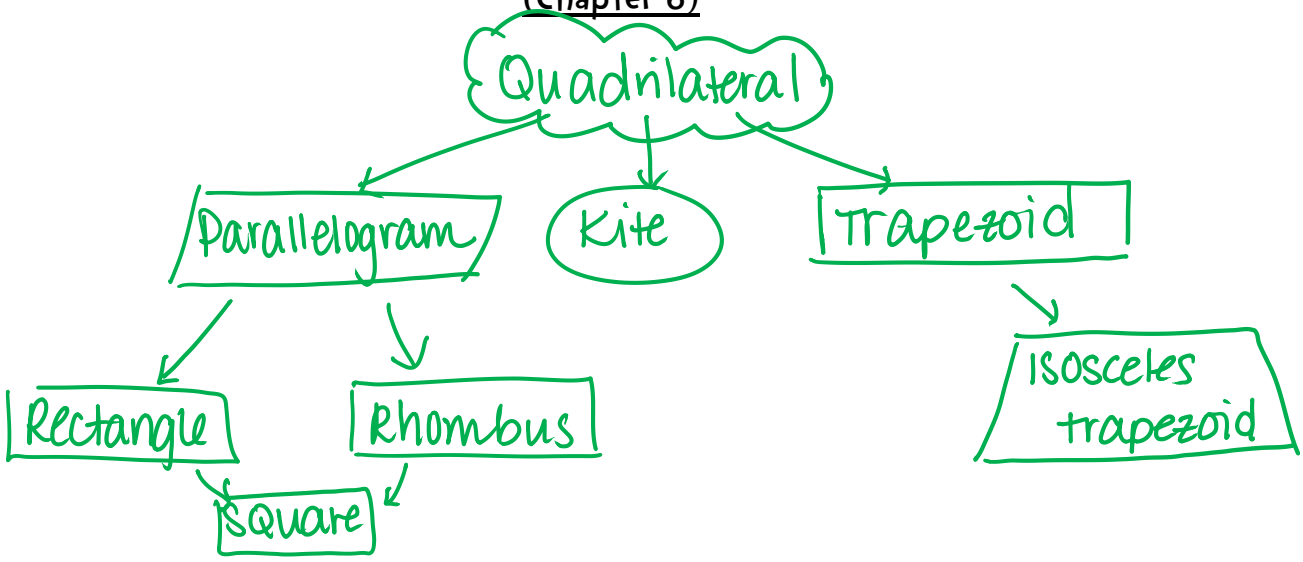
$AC=135$

(Chapter 6)

Station 17

Draw the quadrilateral tree!

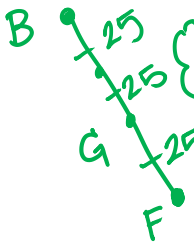
(Chapter 6)



Station 18

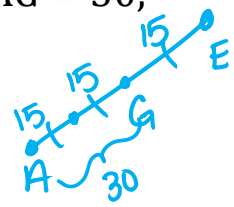
Given the diagram and GF = 25 and AG = 30,

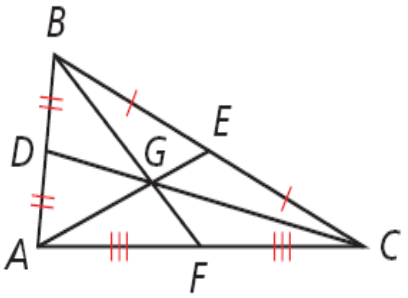
Find: BG and AE



BG=50

AE=45

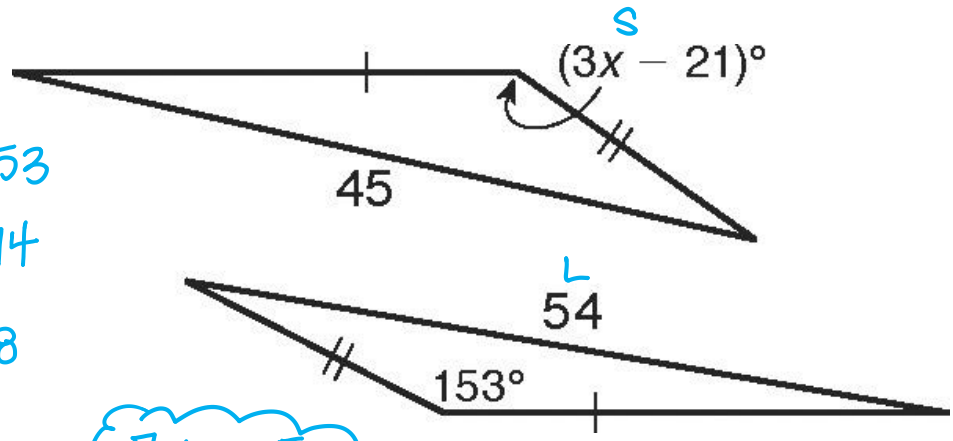




(Chapter 5)

Station 19

Find the range of values for x.



① $3x-21<153$

$3x<174$

$x<58$

② $3x-21>0$

$3x>21$

$x>7$

$7<x<58$

(Chapter 5)