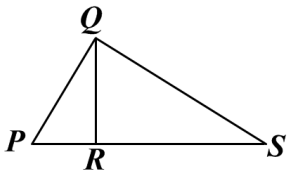
Name: _____

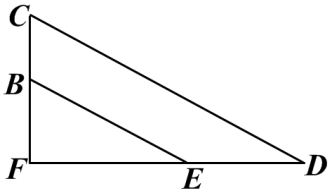
Connected Triangles (Part 1)

A **Reflexive** pair is a pair of angles or sides that are the same as themselves.

For example:



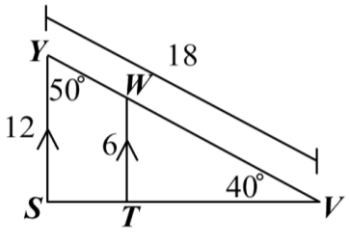
$\overline{QR}$ is reflexive to $\overline{QR}$ because they are the exact same side



$\angle BFE$ is reflexive to $\angle CFD$ because they are the exact same angle.

For each triangle, use the angle relationships that you have learned to determine all possible measures on each triangle set, then fill in the small-medium-large tables.

1.



$\angle WVT$ & $\angle YVT$ are _____$\angle s$

$\angle Y$ & $\angle VWT$ are _____$\angle s$

$\angle S$ & $\angle WTV$ are _____$\angle s$

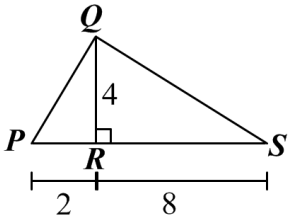
$\triangle YSV$:

	Angles	Opposite Sides
Small	$m\angle$ =	
Medium	$m\angle$ =	
Large	$m\angle$ =	

$\triangle WTV$:

	Angles	Opposite Sides
Small	$m\angle$ =	
Medium	$m\angle$ =	
Large	$m\angle$ =	

2.



$\angle PRQ$ & $\angle SRQ$ are _____$\angle s$

$\overline{QR}$ & $\overline{QR}$ are _____ sides

$\triangle PRQ$:

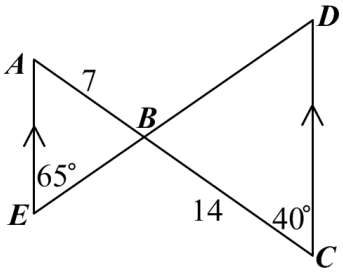
	Angles	Opposite Sides
Small	$m\angle$ =	
Medium	$m\angle$ =	
Large	$m\angle$ =	

$\triangle QRS$:

	Angles	Opposite Sides
Small	$m\angle$ =	
Medium	$m\angle$ =	
Large	$m\angle$ =	

Name: _____

3.



$\angle A$ & $\angle C$ are _____$\angle s$

$\angle E$ & $\angle D$ are _____$\angle s$

$\angle ABE$ & $\angle CBD$ are _____$\angle s$

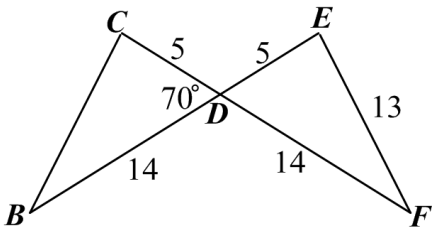
$\triangle ABE$:

	Angles	Opposite Sides
Small	$m\angle$ =	
Medium	$m\angle$ =	
Large	$m\angle$ =	

$\triangle CBD$:

	Angles	Opposite Sides
Small	$m\angle$ =	
Medium	$m\angle$ =	
Large	$m\angle$ =	

4.



$\angle CDB$ & $\angle EDF$ are _____$\angle s$

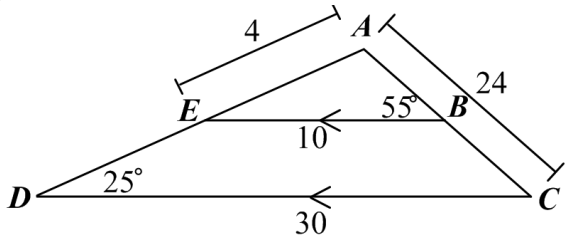
$\triangle CDB$:

	Angles	Opposite Sides
Small	$m\angle$ =	
Medium	$m\angle$ =	
Large	$m\angle$ =	

$\triangle EDF$:

	Angles	Opposite Sides
Small	$m\angle$ =	
Medium	$m\angle$ =	
Large	$m\angle$ =	

5.



$\angle EAB$ & $\angle DAC$ are _____$\angle s$

$\angle D$ & $\angle AEB$ are _____$\angle s$

$\angle C$ & $\angle EBA$ are _____$\angle s$

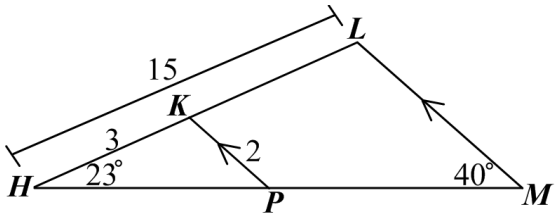
$\triangle AEB$:

	Angles	Opposite Sides
Small	$m\angle$ =	
Medium	$m\angle$ =	
Large	$m\angle$ =	

$\triangle ADC$:

	Angles	Opposite Sides
Small	$m\angle$ =	
Medium	$m\angle$ =	
Large	$m\angle$ =	

6.



$\angle KHP$ & $\angle LHM$ are _____$\angle s$

$\angle PKH$ & $\angle L$ are _____$\angle s$

$\angle HPK$ & $\angle M$ are _____$\angle s$

$\triangle KHP$:

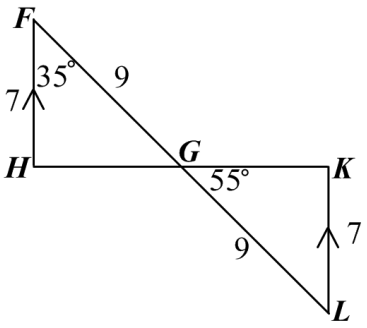
	Angles	Opposite Sides
Small	$m\angle$ =	
Medium	$m\angle$ =	
Large	$m\angle$ =	

$\triangle LHP$:

	Angles	Opposite Sides
Small	$m\angle$ =	
Medium	$m\angle$ =	
Large	$m\angle$ =	

Name: _____

7.



$\angle F$ & $\angle L$ are

_____$\angle s$

$\angle H$ & $\angle K$ are

_____$\angle s$

$\angle FGH$ & $\angle KGL$ are

_____$\angle s$

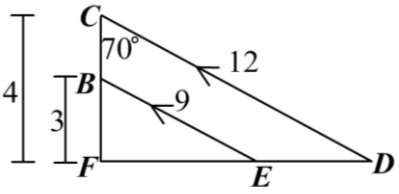
$\triangle FGH$:

	Angles	Opposite Sides
Small	$m\angle$ =	
Medium	$m\angle$ =	
Large	$m\angle$ =	

$\triangle LGK$:

	Angles	Opposite Sides
Small	$m\angle$ =	
Medium	$m\angle$ =	
Large	$m\angle$ =	

8.



$\angle BFE$ & $\angle CFD$ are

_____$\angle s$

$\angle FBE$ & $\angle C$ are

_____$\angle s$

$\angle BEF$ & $\angle D$ are

_____$\angle s$

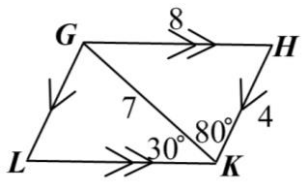
$\triangle BFE$:

	Angles	Opposite Sides
Small	$m\angle$ =	
Medium	$m\angle$ =	
Large	$m\angle$ =	

$\triangle CFD$:

	Angles	Opposite Sides
Small	$m\angle$ =	
Medium	$m\angle$ =	
Large	$m\angle$ =	

9.



$\angle KGL$ & $\angle GKH$ are

_____$\angle s$

$\angle GKL$ & $\angle KGH$ are

_____$\angle s$

$\overline{GK}$ & $\overline{GK}$ are

_____ sides

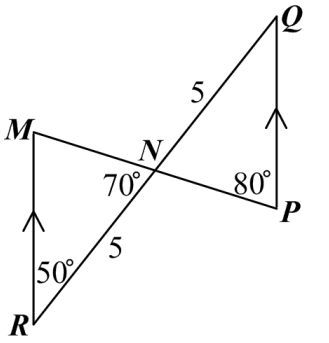
$\triangle GKL$:

	Angles	Opposite Sides
Small	$m\angle$ =	
Medium	$m\angle$ =	
Large	$m\angle$ =	

$\triangle KGH$:

	Angles	Opposite Sides
Small	$m\angle$ =	
Medium	$m\angle$ =	
Large	$m\angle$ =	

10.



$\angle M$ & $\angle P$ are

_____$\angle s$

$\angle R$ & $\angle Q$ are

_____$\angle s$

$\angle MNR$ & $\angle PNQ$ are

_____$\angle s$

$\triangle MNR$:

	Angles	Opposite Sides
Small	$m\angle$ =	
Medium	$m\angle$ =	
Large	$m\angle$ =	

$\triangle PNQ$:

	Angles	Opposite Sides
Small	$m\angle$ =	
Medium	$m\angle$ =	
Large	$m\angle$ =	

Name: _____

Connected Triangles Part 1 Answers

1.
$\angle WVT$ & $\angle YVT$ are reflexive $\angle s$
$\angle Y$ & $\angle VWT$ are corr. $\angle s$
$\angle S$ & $\angle WTV$ are corr. $\angle s$

$m\angle V = 40°$	$YS = 12$
$m\angle Y = 50°$	$\overline{VS}$
$m\angle S = 90°$	$VY = 18$

$m\angle V = 28°$	$WT = 6$
$m\angle W = 31°$	$\overline{VT}$
$m\angle T = 121°$	$\overline{VW}$

2.
$\angle PRQ$ & $\angle SRQ$ are linear pair $\angle s$
$\overline{QR}$ & $\overline{QR}$ are reflexive sides

$m\angle Q$ =?	$PR = 2$
$m\angle P$ =?	$QR = 4$
$m\angle R = 90°$	$\overline{QS}$

$m\angle S$ =?	$QR = 4$
$m\angle Q$ =?	$RS = 8$
$m\angle R = 90°$	$\overline{PQ}$

3.
$\angle A$ & $\angle C$ are alt. int. $\angle s$
$\angle E$ & $\angle D$ are alt. int. $\angle s$
$\angle ABE$ & $\angle CBD$ are $\angle s$

$m\angle A = 40°$	$\overline{EB}$
$m\angle E = 65°$	$AB = 7$
$m\angle B = 75°$	$\overline{AE}$

$m\angle C = 40°$	$\overline{DB}$
$m\angle D = 65°$	$CB = 14$
$m\angle B = 75°$	$\overline{CD}$

4.
$\angle CDB$ & $\angle EDF$ are vert. $\angle s$

$m\angle F$ =?	$DE = 5$
$m\angle D = 70°$	$FE = 13$
$m\angle E$ =?	$FD = 14$

$m\angle B$ =?	$DC = 5$
$m\angle D = 70°$	$\overline{BC}$
$m\angle C$ =?	$BD = 14$

5.
$\angle EAB$ & $\angle DAC$ are reflexive $\angle s$
$\angle D$ & $\angle AEB$ are corr. $\angle s$
$\angle C$ & $\angle EBA$ are corr. $\angle s$

$m\angle E = 25°$	$\overline{BA}$
$m\angle B = 55°$	$EA = 4$
$m\angle A = 100°$	$EB = 10$

$m\angle D = 25°$	$CA = 24$
$m\angle C = 55°$	$\overline{DA}$
$m\angle A = 100°$	$DC = 30$

6.
$\angle KHP$ & $\angle LHM$ are reflexive $\angle s$
$\angle PKH$ & $\angle L$ are corr. $\angle s$
$\angle HPK$ & $\angle M$ are corr. $\angle s$

$m\angle H = 23°$	$PK = 2$
$m\angle P = 40°$	$HK = 3$
$m\angle K = 117°$	$\overline{HP}$

$m\angle H = 23°$	$\overline{ML}$
$m\angle M = 40°$	$HL = 15$
$m\angle L = 117°$	$\overline{HM}$

7.
$\angle F$ & $\angle L$ are alt. int. $\angle s$
$\angle H$ & $\angle K$ are alt. int. $\angle s$
$\angle FGH$ & $\angle KGL$ are vert. $\angle s$

$m\angle F = 35°$	$\overline{GH}$
$m\angle G = 55°$	$FH =$ &
$m\angle H = 90°$	$FG = 9$

$m\angle L = 35°$	$\overline{GK}$
$m\angle G = 55°$	$LK = 7$
$m\angle K = 90°$	$LG = 9$

8.
$\angle BFE$ & $\angle CFD$ are reflexive $\angle s$
$\angle FBE$ & $\angle C$ are corr. $\angle s$
$\angle BEF$ & $\angle D$ are corr. $\angle s$

$m\angle E$ =?	$BF = 3$
$m\angle B = 70°$	$\overline{EF}$
$m\angle F$ =?	$FB = 9$

$m\angle D$ =?	$CF = 4$
$m\angle C = 70°$	$\overline{DF}$
$m\angle F$ =?	$DC = 12$

9.
$\angle KGL$ & $\angle GKH$ are alt. int. $\angle s$; $\angle GKL$ & $\angle KGH$ are alt. int. $\angle s$; $\overline{GK}$ & $\overline{GK}$ are reflexive sides

$m\angle K = 30°$	$\overline{LG}$
$m\angle L = 70°$	$KG = 7$
$m\angle G = 80°$	$\overline{KL}$

$m\angle G = 30°$	$HK = 4$
$m\angle H = 70°$	$GK = 7$
$m\angle K = 80°$	$GH = 8$

10.
$\angle M$ & $\angle P$ are alt. int. $\angle s$; $\angle R$ & $\angle Q$ are alt. int. $\angle s$; $\angle MNR$ & $\angle PNQ$ are vert. $\angle s$

$m\angle R = 50°$	$\overline{NM}$
$m\angle N = 70°$	$\overline{RM}$
$m\angle M = 80°$	$RN = 5$

$m\angle Q = 50°$	$\overline{NP}$
$m\angle N = 70°$	$\overline{QP}$
$m\angle P = 80°$	$QN = 5$