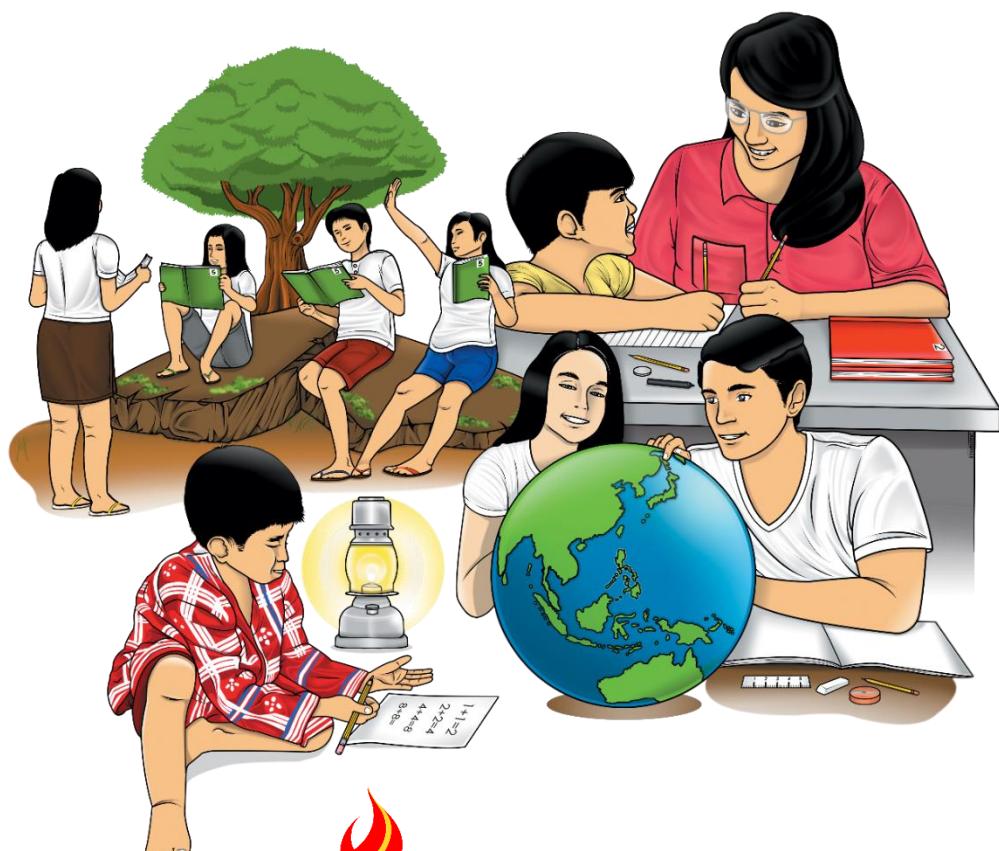


Mathematics

Quarter 3 – Module 3

Illustrating Triangle Congruence



Mathematics – Grade 8
Alternative Delivery Mode
Quarter 3 – Module 3: Illustrating Triangle Congruence
First Edition, 2020

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Mathematics
Quarter 3 – Module 3
Illustrating Triangle Congruence

Introductory Message

This Self-Learning Module (SLM) is prepared so that you, our dear learners, can continue your studies and learn while at home. Activities, questions, directions, exercises, and discussions are carefully stated for you to understand each lesson.

Each SLM is composed of different parts. Each part shall guide you step-by-step as you discover and understand the lesson prepared for you.

Pre-tests are provided to measure your prior knowledge on lessons in each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for better understanding of the lesson. At the end of each module, you need to answer the post-test to self-check your learning. Answer keys are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text, Notes to the Teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you on your home-based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and tests. And read the instructions carefully before performing each task.

If you have any questions in using this SLM or any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator.

Thank you.



What I Need to Know

This module was designed and written with you in mind. It is here to help you illustrate triangle congruence. You are provided with varied activities to process the knowledge and skills learned and to deepen and transfer your understanding of the lesson. The scope of this module enables you to use it in many different learning situations. The lessons are arranged to follow the standard sequence of the course. But the order in which you read them can be changed to correspond with the textbook you are now using.

This module contains concepts on how to illustrate triangle congruence.

After going through this module, you are expected to:

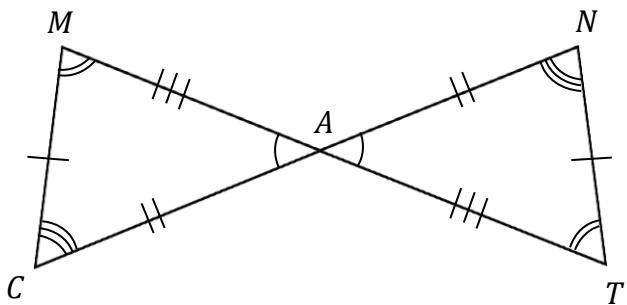
1. define triangle congruence;
2. draw and label the corresponding parts of two congruent triangles;
3. identify corresponding parts of two congruent triangles; and
3. relate triangle congruence in real-life.



What I Know

Directions: Choose the letter of the correct answer. Write the chosen letter on a separate sheet of paper.

For items 7 - 10, consider the figure below.



7. Which segment corresponds to \overline{NT} ?
- \overline{AT}
 - \overline{AC}
 - \overline{CM}
 - \overline{MA}
8. Which angle corresponds to $\angle T$?
- $\angle A$
 - $\angle C$
 - $\angle M$
 - $\angle N$
9. Which vertex corresponds to A ?
- A
 - M
 - N
 - T
10. What conclusion can you make in the figure?
- $\triangle ANT \cong \triangle MAC$
 - $\triangle ANT \cong \triangle CAM$
 - $\triangle AMC \cong \triangle ATN$
 - $\triangle AMC \cong \triangle TAN$
11. If $\triangle LMN \cong \triangle PRQ$, then what angle corresponds to $\angle Q$?
- $\angle L$
 - $\angle N$
 - $\angle P$
 - $\angle R$
12. Which of the following figures illustrate pair of congruent triangles?
- -
 -
 -

13. Which of the following correspondence is equivalent to $\angle JKL \cong \angle MNO$?

- A. $\angle KJL \leftrightarrow \angle MON$
- B. $\angle KJL \leftrightarrow \angle OMN$
- C. $\angle JLK \leftrightarrow \angle NMO$
- D. $\angle LKJ \leftrightarrow \angle ONM$

14. If $\triangle NAT \cong \triangle GEO$, then name the corresponding sides of the congruent triangles.

- | | |
|--|--|
| A. $\overline{NA} \cong \overline{GE}$
$\overline{AT} \cong \overline{EO}$
$\overline{NT} \cong \overline{GO}$ | C. $\overline{AT} \cong \overline{EO}$
$\overline{NT} \cong \overline{EG}$
$\overline{NA} \cong \overline{OG}$ |
| B. $\overline{NA} \cong \overline{GO}$
$\overline{AT} \cong \overline{EO}$
$\overline{NT} \cong \overline{GE}$ | D. $\overline{AT} \cong \overline{GE}$
$\overline{NA} \cong \overline{EO}$
$\overline{NT} \cong \overline{GO}$ |

15. Lyka was asked by her Math teacher to give and write the corresponding sides of congruent triangles, $\triangle CAT$ and $\triangle DOG$, on the board. Her answer is shown below.

$$\begin{aligned}\overline{AC} &\leftrightarrow \overline{OD} \\ \overline{CT} &\leftrightarrow \overline{DG} \\ \overline{AT} &\leftrightarrow \overline{OD}\end{aligned}$$

Is Lyka's answer correct?

- A. Yes, because each side of $\triangle CAT$ is paired correctly to each side of $\triangle DOG$.
- B. Yes, because each angle of $\triangle CAT$ is paired correctly to each angle of $\triangle DOG$.
- C. No, because \overline{AT} corresponds to \overline{OG} .
- D. No, because \overline{CT} corresponds to \overline{OG} .

Lesson 1

Illustrating Triangle Congruence

Designs and patterns having the same size and shape thrive in almost every place. These can be seen in bridges and condominiums, furniture and appliances, as well as in fabrics and crafts.

Triangle is one of the most important figures studied in Mathematics because of its many uses in the real-world.

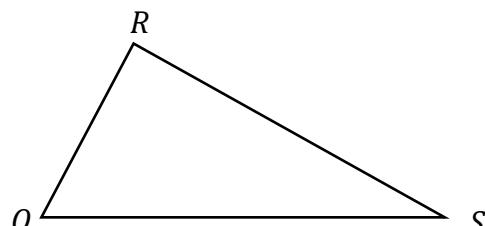
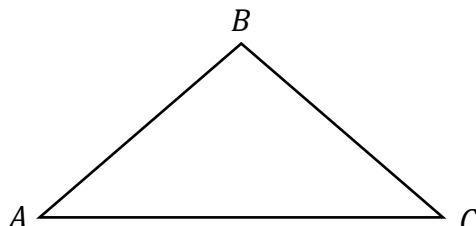
Let us know more about triangles, particularly congruent triangles by performing the array of activities in this module. Have fun!



What's In

Activity: Identify V-A-S (Vertices – Angles – Sides)

Directions: Identify the vertices, angles, and sides of each triangle. Then, answer the questions below using complete sentences.



Vertices	Angles	Sides

Vertices	Angles	Sides

Questions:

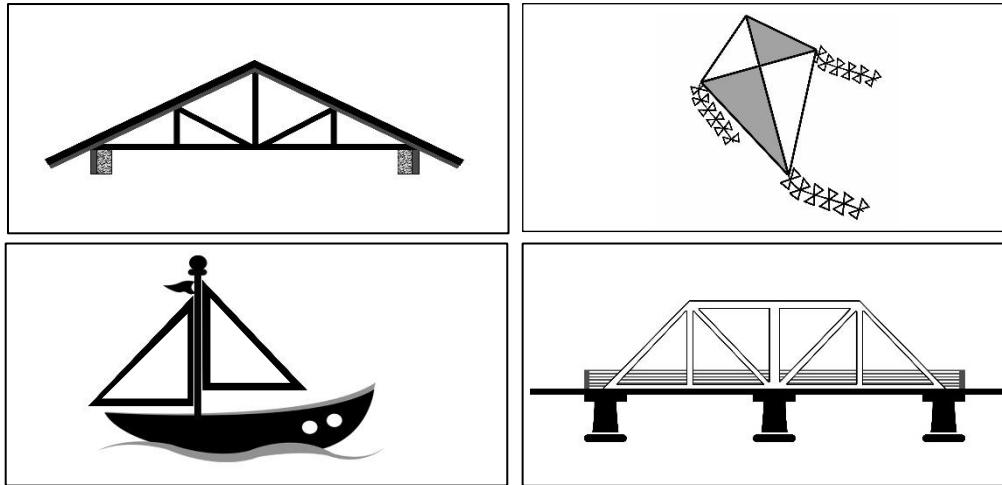
- How did you identify the vertices, angles, and sides of each triangle?
- How would you define angle?
- What about the definition of a vertex?
- In geometry, what is meant by side?



What's New

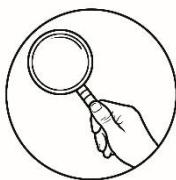
Activity: Four Pics – Two Words

Directions: Consider the figures below and answer the questions that follow.



Questions

1. What geometric figures were highlighted in the illustrations?
2. What have you observed with the size and shape of the geometric figures? Explain your answer.

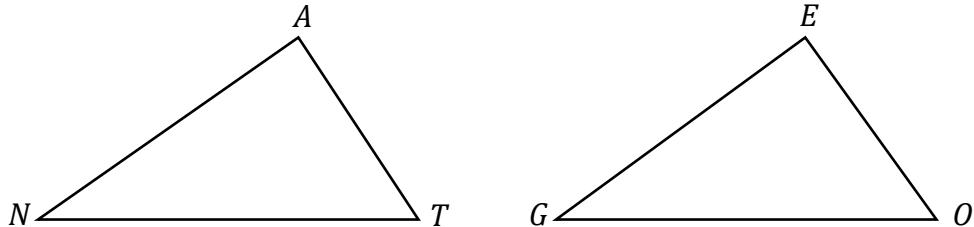


What is It

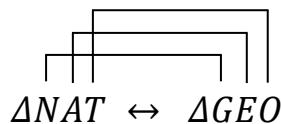
- Two line segments are congruent if their endpoints can be made to coincide.
- Two angles are congruent if their sides can be made to coincide.
- Two triangles are equal if they have the same size and shape.
- Two triangles are congruent if their corresponding parts are congruent.

Definition of Correspondence

Pairing the parts of one group to the parts of another group is called correspondence. Correspondence uses the notation “ \leftrightarrow ”.



Assume $\triangle NAT$ coincides with $\triangle GEO$, such that the vertices of $\triangle NAT$ fit exactly over the vertices of $\triangle GEO$. The correspondence can be created between triangles.



Note

In naming congruent triangles, the order of the letters representing the vertices of one triangle shall be written in the same order as their corresponding vertices in the other triangle.

In this correspondence, there are three pairs of corresponding vertices, angles, and sides.

Corresponding Vertices

$$\begin{aligned}N &\leftrightarrow G \\A &\leftrightarrow E \\T &\leftrightarrow O\end{aligned}$$

Corresponding Angles

$$\begin{aligned}\angle N &\leftrightarrow \angle G \\\angle A &\leftrightarrow \angle E \\\angle T &\leftrightarrow \angle O\end{aligned}$$

Corresponding Sides

$$\begin{aligned}\overline{NA} &\leftrightarrow \overline{GE} \\\overline{AT} &\leftrightarrow \overline{EO} \\\overline{NT} &\leftrightarrow \overline{GO}\end{aligned}$$

Since the vertices of $\triangle NAT$ fit exactly with the vertices of $\triangle GEO$, therefore $\triangle NAT$ and $\triangle GEO$ are congruent. In symbols,

$$\triangle NAT \cong \triangle GEO$$

Definition of Congruent Triangles

Two triangles are congruent if and only if the corresponding sides and the corresponding angles are congruent.

($\triangle NAT \cong \triangle GEO$ is read as “triangle $N - A - T$ is congruent to triangle $G - E - O$ ”)

It implies that the corresponding parts of congruent triangles are also congruent.

CPCTC

Corresponding Parts of Congruent Triangles are Congruent.

Congruent Angles

$$\angle N \cong \angle G$$

$$\angle A \cong \angle E$$

$$\angle T \cong \angle O$$

Congruent Sides

$$\overline{NA} \cong \overline{GE}$$

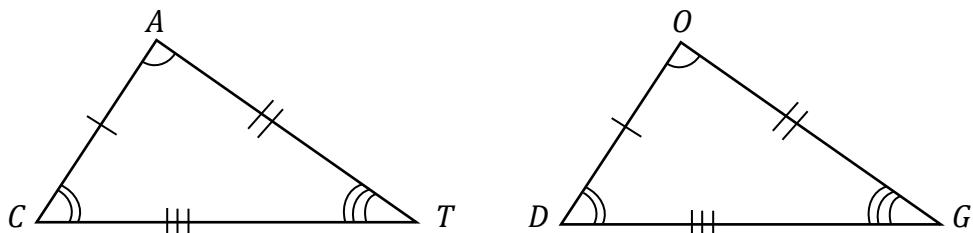
$$\overline{AT} \cong \overline{EO}$$

$$\overline{NT} \cong \overline{GO}$$

Conversely, if the corresponding parts of the two triangles are congruent, then the two triangles are congruent.

Example 1

$\triangle CAT \cong \triangle DOG$. Write down the pairs of corresponding parts.



Solution

The congruent parts of congruent triangles can be determined with the help of arcs and tick-marks.

Corresponding Angles

$$\angle C \leftrightarrow \angle D$$

$$\angle A \leftrightarrow \angle O$$

$$\angle T \leftrightarrow \angle G$$

Corresponding Sides

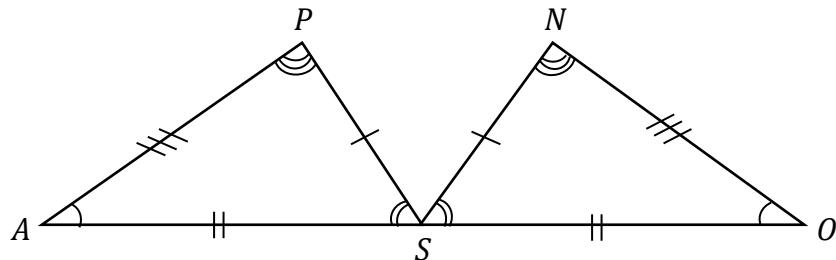
$$\overline{CA} \leftrightarrow \overline{DO}$$

$$\overline{CT} \leftrightarrow \overline{DG}$$

$$\overline{AT} \leftrightarrow \overline{OG}$$

Example 2

Given that the two triangles below are congruent, list the pairs of congruent angles and congruent sides and then name the congruent triangles.



Solution

Congruent Angles

- $\angle A \cong \angle O$
- $\angle P \cong \angle N$
- $\angle PSA \cong \angle NSO$

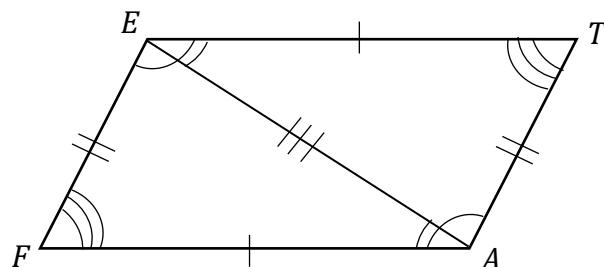
Congruent Sides

- $\overline{PS} \cong \overline{NS}$
- $\overline{PA} \cong \overline{NO}$
- $\overline{SA} \cong \overline{SO}$

$$\triangle PSA \cong \triangle NSO$$

Example 3

Consider $\triangle FAE \cong \triangle TEA$. List down the pairs of congruent angles and congruent sides.



Solution

Again, the congruent parts of congruent triangles can be determined with the help of arcs and tick-marks. Since $\triangle FAE \cong \triangle TEA$, then the corresponding parts are as follows:

Corresponding Angles

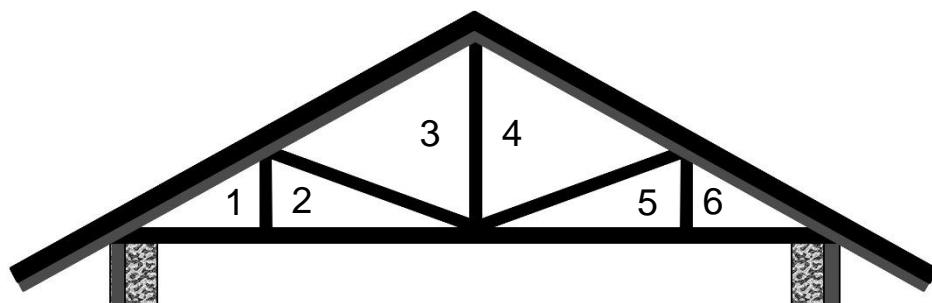
- $\angle F \leftrightarrow \angle T$
- $\angle FEA \leftrightarrow \angle TAE$
- $\angle FAE \leftrightarrow \angle TEA$

Corresponding Sides

- $\overline{FA} \leftrightarrow \overline{TE}$
- $\overline{FE} \leftrightarrow \overline{TA}$
- $\overline{EA} \leftrightarrow \overline{AE}$

Example 4

Assume that segments and angles in the numbered triangles are congruent. Identify which triangles are congruent.

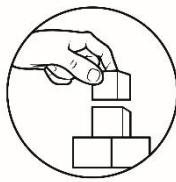


Solution

Looking at the figures, it can be deduced that $\triangle 1 \cong \triangle 6$, $\triangle 2 \cong \triangle 5$, and $\triangle 3 \cong \triangle 4$.

Remember:

- Triangles that have exactly the same size and shape are congruent.
- Two triangles are congruent if their corresponding sides and angles are congruent.
- Two triangles are congruent if they fit exactly or coincide when one triangle is put on top of the other.

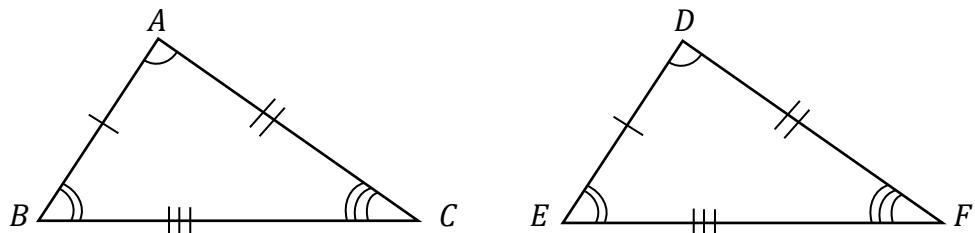


What's More

Activity 1: Find My PARTner

Description: In this activity, you will be pairing parts of one triangle to the parts of another triangle. Note that the notation “ \leftrightarrow ” shows corresponding parts.

Directions: Copy the table on your answer sheet and supply the missing part of the triangle that will make each correspondence complete. Answer the questions that follow.



Corresponding Vertices	Corresponding Angles	Corresponding Sides
$A \leftrightarrow \underline{\hspace{1cm}}$ $\underline{\hspace{1cm}} \leftrightarrow E$ $C \leftrightarrow F$	$\angle A \leftrightarrow \underline{\hspace{1cm}}$ $\angle B \leftrightarrow \underline{\hspace{1cm}}$ $\angle C \leftrightarrow \underline{\hspace{1cm}}$	$\overline{AB} \leftrightarrow \underline{\hspace{1cm}}$ $\underline{\hspace{1cm}} \leftrightarrow \overline{DF}$ $\overline{BC} \leftrightarrow \underline{\hspace{1cm}}$

Questions:

1. What have you noticed on the given triangles?
2. What does the mark of the angles and sides of the triangle indicate?
3. Are there angles and sides that have the same measure and length? Explain your answer.
4. Describe the relationship between $\triangle ABC$ and $\triangle DEF$.

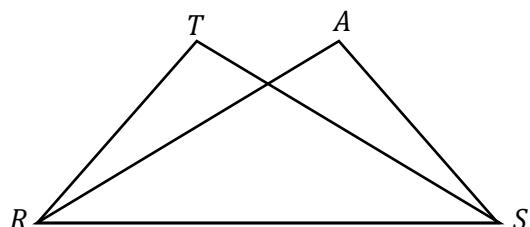
Activity 2: Draw and Name

Directions: Do what is asked. Use a separate sheet of paper.

1. Draw $\triangle ACT \cong \triangle NOW$. Put identical markings on corresponding congruent parts.



2. $\triangle STR \cong \triangle RAS$. Name the six pairs of corresponding congruent parts.



Congruent Angles

Congruent Sides

3. Listed below are the six pairs of corresponding parts of two congruent triangles. Name the two congruent triangles.

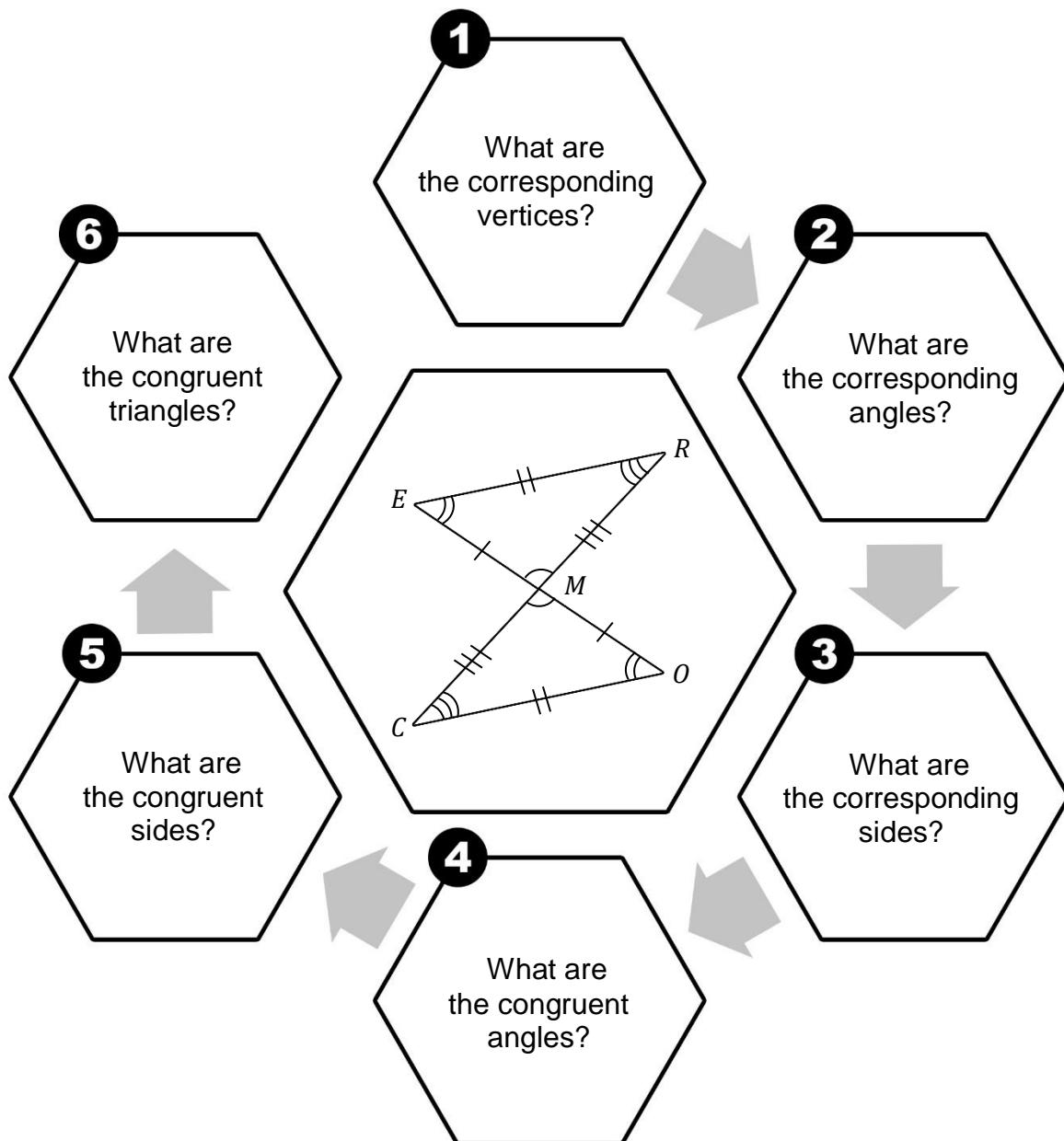
Congruent Angles	Congruent Sides
$\angle T \cong \angle E$ $\angle O \cong \angle O$ $\angle W \cong \angle N$	$\overline{TW} \cong \overline{EN}$ $\overline{OT} \cong \overline{OE}$ $\overline{WO} \cong \overline{NO}$

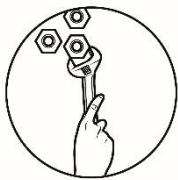
Congruent Triangles



What I Have Learned

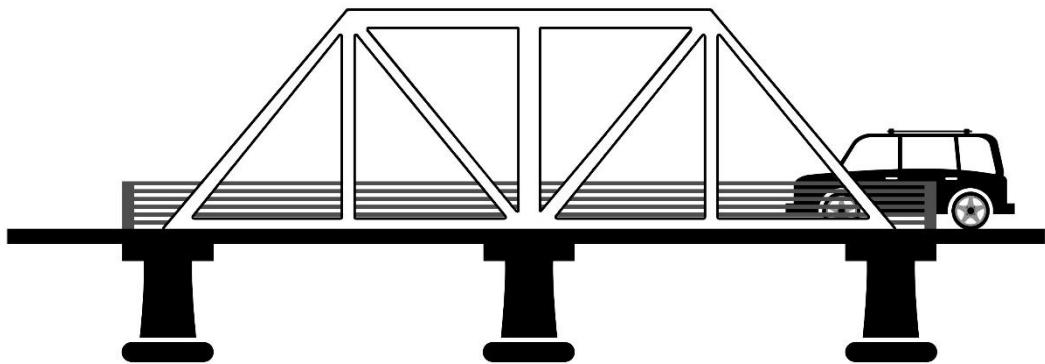
Let us see how far you have learned about congruent triangles by answering each question in the diagram below. Consider the figure at the center. Write your answers on a separate paper.





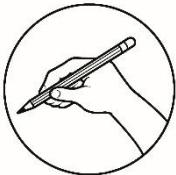
What I Can Do

One of the structural applications of triangles can be seen in bridges. In the illustration below, there are pairs of congruent triangles. Do what is asked below and write your answer on a separate paper.



Directions:

1. Select a pair of congruent triangles.
2. Label these triangles as $\triangle SAF$ and $\triangle EAF$.
3. Put similar markings to show clearly the congruent sides and congruent angles.
4. List down the corresponding congruent parts of the congruent triangles.



Assessment

Directions: Choose the letter of the correct answer. Write the chosen letter on a separate sheet of paper.

1. Which of the following statements is **not true** about congruent triangles?
 - A. They are dissimilar.
 - B. They are coinciding.
 - C. They have the same size and shape.
 - D. They have corresponding congruent parts.

2. How many pairs of corresponding congruent parts are there in two congruent triangles?

A. 2	C. 4
B. 3	D. 6

3. If $\triangle FRY \cong \triangle HOT$, which segment is congruent to \overline{RY} ?

A. \overline{HT}	C. \overline{OT}
B. \overline{FY}	D. \overline{RF}

4. Which of the following is true about the corresponding parts of congruent triangles?
 - A. They are unequal.
 - B. They are congruent.
 - C. They are supplementary.
 - D. They are complementary.

5. If $\triangle SIT \cong \triangle HOP$, then what angle corresponds to $\angle T$?

A. $\angle H$	C. $\angle P$
B. $\angle I$	D. $\angle S$

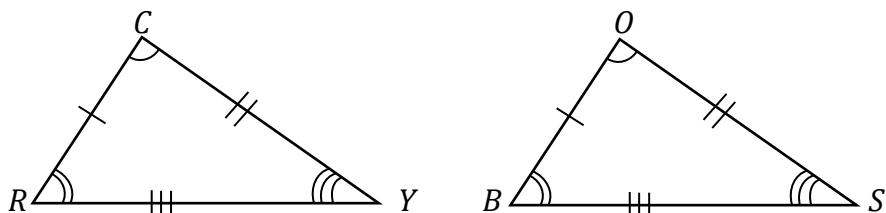
6. Name the congruent triangles whose pairs of corresponding parts are shown below.

$\angle H \cong \angle S$	$\overline{RE} \cong \overline{NO}$
$\angle R \cong \angle N$	$\overline{HE} \cong \overline{SO}$
$\angle E \cong \angle O$	$\overline{HR} \cong \overline{SN}$

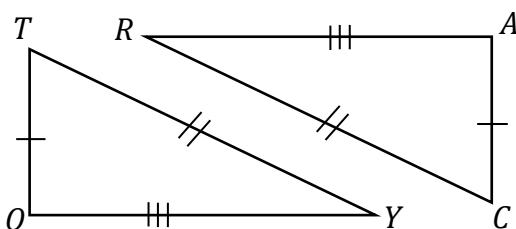
A. $\triangle NOS \cong \triangle HER$	C. $\triangle SON \cong \triangle EHR$
B. $\triangle NSO \cong \triangle ERH$	D. $\triangle SON \cong \triangle HER$

7. In the figure, $\triangle CRY \cong \triangle OBS$, what is the side corresponding to \overline{SB} ?

- A. \overline{BC}
- B. \overline{CR}
- C. \overline{YC}
- D. \overline{YR}



8. Use the marked triangles in writing a correct congruence statement.



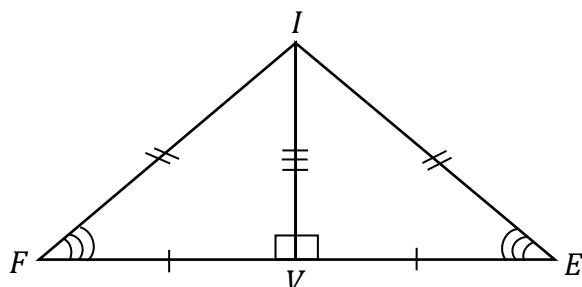
A. $\overline{CR} \cong \overline{TY}$
 $\overline{OY} \cong \overline{CA}$
 $\overline{RA} \cong \overline{OY}$
 $\triangle TOY \cong \triangle CAR$

C. $\overline{TO} \cong \overline{CA}$
 $\overline{TY} \cong \overline{RC}$
 $\overline{OY} \cong \overline{AC}$
 $\triangle TOY \cong \triangle CAR$

B. $\overline{CR} \cong \overline{TY}$
 $\overline{OY} \cong \overline{AR}$
 $\overline{TY} \cong \overline{RA}$
 $\triangle TOY \cong \triangle CAR$

D. $\overline{OT} \cong \overline{AC}$
 $\overline{TY} \cong \overline{CR}$
 $\overline{OY} \cong \overline{AR}$
 $\triangle TOY \cong \triangle CAR$

For items 9-12, refer to the figure shown below.



9. Which of the following shows a pair of congruent triangles?

- A. $\triangle FIV \cong \triangle IVE$
- B. $\triangle FIV \cong \triangle EIV$
- C. $\triangle IFV \cong \triangle IVE$
- D. $\triangle IFV \cong \triangle VIE$

10. What angle corresponds to $\angle FVI$?

- A. $\angle E$ C. $\angle EIV$
B. $\angle F$ D. $\angle EVI$

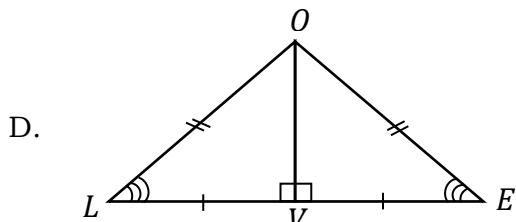
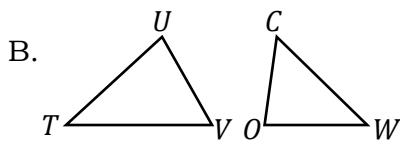
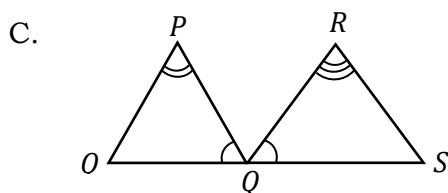
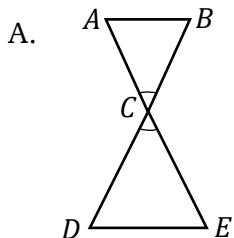
11. Which segment is congruent to \overline{EV} ?

- A. \overline{IE} C. \overline{FV}
B. \overline{IV} D. \overline{VE}

12. Which vertex corresponds to F ?

- A. E C. F
B. I D. V

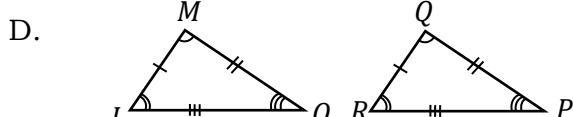
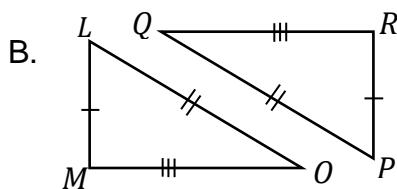
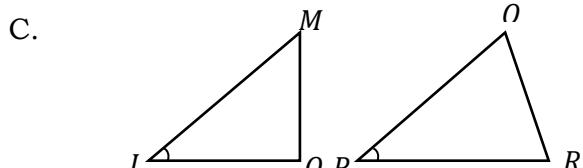
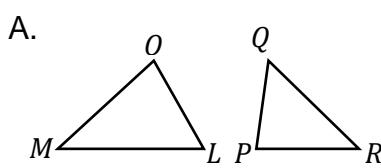
13. Which of the following figures show congruent triangles?

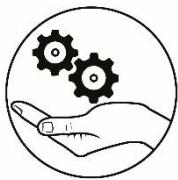


14. What would be the name of the congruent triangles given their corresponding sides: $\overline{LO} \cong \overline{RP}$, $\overline{MO} \cong \overline{QP}$, $\overline{LM} \cong \overline{RQ}$?

- A. $\triangle LOM \cong \triangle QPR$ C. $\triangle MOL \cong \triangle RQP$
B. $\triangle OML \cong \triangle PQR$ D. $\triangle LMO \cong \triangle PQR$

15. Which of the following illustrations below best describe the congruent triangle in item 14?

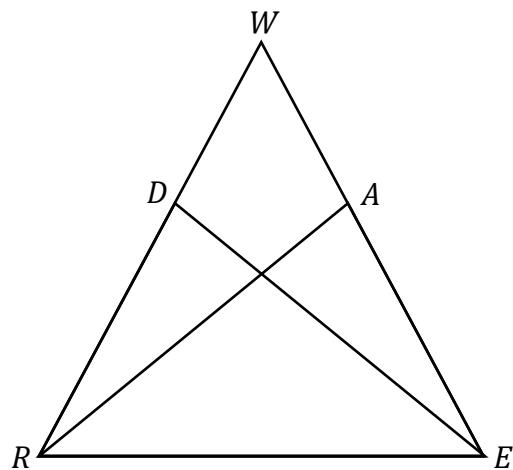




Additional Activities

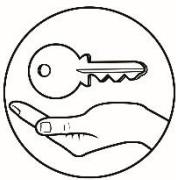
Directions: Do what is asked. Use separate paper to draw your answers.

Given: $\triangle RED \cong \triangle ERA$



1. Separate the overlapping triangles.

2. Put identical/similar markings to show clearly the congruent sides and congruent angles.



Answer Key

Additional Activities		Assessment	What I Have Learned	What I Can Do	What's New	What I Know
1. $\text{AMER} \equiv \text{AMOC}$	2. $M \leftrightarrow M$	3. $LM \leftrightarrow LM$	4. $MO \leftrightarrow ME$	5. $CO \leftrightarrow RE$	6. $LA \equiv LA$	7. D
4. B	5. C	6. D	7. D	8. D	9. B	10. D
11. C	12. A	13. D	14. B	15. D	16. $MO \equiv ME$	17. D
18. D	19. C	20. D	21. A	22. D	23. $CO \equiv RE$	24. D
25. $LA \rightarrow LM$	26. $CO \rightarrow RE$	27. $LO \rightarrow LE$	28. $AS \equiv AF$	29. $SP \equiv EF$	30. $CM \equiv RM$	31. $B \rightarrow E$
32. $AB \rightarrow DE$	33. $AC \rightarrow DF$	34. $BC \rightarrow EF$	35. $CD \rightarrow GH$	36. $AD \rightarrow HI$	37. $CE \rightarrow JK$	38. $AE \rightarrow KL$
39. $AB \leftrightarrow CD$	40. $AC \leftrightarrow BC$	41. $BC \leftrightarrow AC$	42. $AB \leftrightarrow DC$	43. $AD \leftrightarrow CB$	44. $AC \leftrightarrow BD$	45. $AB \leftrightarrow DC$
46. $AB \leftrightarrow DC$	47. $AC \leftrightarrow BC$	48. $BC \leftrightarrow AC$	49. $AB \leftrightarrow DC$	50. $AD \leftrightarrow CB$	51. $AC \leftrightarrow BD$	52. $AB \leftrightarrow DC$
53. Corresponding Vertices	54. Corresponding Angles	55. Corresponding Angles	56. Corresponding Angles	57. Corresponding Angles	58. Corresponding Angles	59. Corresponding Angles
60. A	61. B	62. C	63. D	64. E	65. F	66. G
67. H	68. I	69. J	70. K	71. L	72. M	73. N
74. O	75. P	76. Q	77. R	78. S	79. T	80. W
81. $AB \leftrightarrow DC$	82. $AC \leftrightarrow BC$	83. $BC \leftrightarrow AC$	84. $AB \leftrightarrow DC$	85. $AD \leftrightarrow CB$	86. $AC \leftrightarrow BD$	87. $AB \leftrightarrow DC$
88. A	89. B	90. C	91. D	92. E	93. F	94. G
95. H	96. I	97. J	98. K	99. L	100. M	101. N
102. O	103. P	104. Q	105. R	106. S	107. T	108. W
109. $AB \leftrightarrow DC$	110. $AC \leftrightarrow BC$	111. $BC \leftrightarrow AC$	112. $AB \leftrightarrow DC$	113. $AD \leftrightarrow CB$	114. $AC \leftrightarrow BD$	115. $AB \leftrightarrow DC$
116. A	117. B	118. C	119. D	120. E	121. F	122. G
123. H	124. I	125. J	126. K	127. L	128. M	129. N
130. O	131. P	132. Q	133. R	134. S	135. T	136. W
137. $AB \leftrightarrow DC$	138. $AC \leftrightarrow BC$	139. $BC \leftrightarrow AC$	140. $AB \leftrightarrow DC$	141. $AD \leftrightarrow CB$	142. $AC \leftrightarrow BD$	143. $AB \leftrightarrow DC$
144. A	145. B	146. C	147. D	148. E	149. F	150. G
151. H	152. I	153. J	154. K	155. L	156. M	157. N
158. O	159. P	160. Q	161. R	162. S	163. T	164. W
165. $AB \leftrightarrow DC$	166. $AC \leftrightarrow BC$	167. $BC \leftrightarrow AC$	168. $AB \leftrightarrow DC$	169. $AD \leftrightarrow CB$	170. $AC \leftrightarrow BD$	171. $AB \leftrightarrow DC$
172. A	173. B	174. C	175. D	176. E	177. F	178. G
179. H	180. I	181. J	182. K	183. L	184. M	185. N
186. O	187. P	188. Q	189. R	190. S	191. T	192. W
193. $AB \leftrightarrow DC$	194. $AC \leftrightarrow BC$	195. $BC \leftrightarrow AC$	196. $AB \leftrightarrow DC$	197. $AD \leftrightarrow CB$	198. $AC \leftrightarrow BD$	199. $AB \leftrightarrow DC$
200. A	201. B	202. C	203. D	204. E	205. F	206. G
207. H	208. I	209. J	210. K	211. L	212. M	213. N
214. O	215. P	216. Q	217. R	218. S	219. T	220. W
221. $AB \leftrightarrow DC$	222. $AC \leftrightarrow BC$	223. $BC \leftrightarrow AC$	224. $AB \leftrightarrow DC$	225. $AD \leftrightarrow CB$	226. $AC \leftrightarrow BD$	227. $AB \leftrightarrow DC$
228. A	229. B	230. C	231. D	232. E	233. F	234. G
235. H	236. I	237. J	238. K	239. L	240. M	241. N
242. O	243. P	244. Q	245. R	246. S	247. T	248. W
249. $AB \leftrightarrow DC$	250. $AC \leftrightarrow BC$	251. $BC \leftrightarrow AC$	252. $AB \leftrightarrow DC$	253. $AD \leftrightarrow CB$	254. $AC \leftrightarrow BD$	255. $AB \leftrightarrow DC$
256. A	257. B	258. C	259. D	260. E	261. F	262. G
263. H	264. I	265. J	266. K	267. L	268. M	269. N
270. O	271. P	272. Q	273. R	274. S	275. T	276. W
277. $AB \leftrightarrow DC$	278. $AC \leftrightarrow BC$	279. $BC \leftrightarrow AC$	280. $AB \leftrightarrow DC$	281. $AD \leftrightarrow CB$	282. $AC \leftrightarrow BD$	283. $AB \leftrightarrow DC$
284. A	285. B	286. C	287. D	288. E	289. F	290. G
291. H	292. I	293. J	294. K	295. L	296. M	297. N
298. O	299. P	300. Q	301. R	302. S	303. T	304. W
305. $AB \leftrightarrow DC$	306. $AC \leftrightarrow BC$	307. $BC \leftrightarrow AC$	308. $AB \leftrightarrow DC$	309. $AD \leftrightarrow CB$	310. $AC \leftrightarrow BD$	311. $AB \leftrightarrow DC$
312. A	313. B	314. C	315. D	316. E	317. F	318. G
319. H	320. I	321. J	322. K	323. L	324. M	325. N
326. O	327. P	328. Q	329. R	330. S	331. T	332. W
333. $AB \leftrightarrow DC$	334. $AC \leftrightarrow BC$	335. $BC \leftrightarrow AC$	336. $AB \leftrightarrow DC$	337. $AD \leftrightarrow CB$	338. $AC \leftrightarrow BD$	339. $AB \leftrightarrow DC$
340. A	341. B	342. C	343. D	344. E	345. F	346. G
347. H	348. I	349. J	350. K	351. L	352. M	353. N
354. O	355. P	356. Q	357. R	358. S	359. T	360. W
361. $AB \leftrightarrow DC$	362. $AC \leftrightarrow BC$	363. $BC \leftrightarrow AC$	364. $AB \leftrightarrow DC$	365. $AD \leftrightarrow CB$	366. $AC \leftrightarrow BD$	367. $AB \leftrightarrow DC$
368. A	369. B	370. C	371. D	372. E	373. F	374. G
375. H	376. I	377. J	378. K	379. L	380. M	381. N
382. O	383. P	384. Q	385. R	386. S	387. T	388. W
389. $AB \leftrightarrow DC$	390. $AC \leftrightarrow BC$	391. $BC \leftrightarrow AC$	392. $AB \leftrightarrow DC$	393. $AD \leftrightarrow CB$	394. $AC \leftrightarrow BD$	395. $AB \leftrightarrow DC$
396. A	397. B	398. C	399. D	400. E	401. F	402. G
403. H	404. I	405. J	406. K	407. L	408. M	409. N
410. O	411. P	412. Q	413. R	414. S	415. T	416. W
417. $AB \leftrightarrow DC$	418. $AC \leftrightarrow BC$	419. $BC \leftrightarrow AC$	420. $AB \leftrightarrow DC$	421. $AD \leftrightarrow CB$	422. $AC \leftrightarrow BD$	423. $AB \leftrightarrow DC$
424. A	425. B	426. C	427. D	428. E	429. F	430. G
431. H	432. I	433. J	434. K	435. L	436. M	437. N
438. O	439. P	440. Q	441. R	442. S	443. T	444. W
445. $AB \leftrightarrow DC$	446. $AC \leftrightarrow BC$	447. $BC \leftrightarrow AC$	448. $AB \leftrightarrow DC$	449. $AD \leftrightarrow CB$	450. $AC \leftrightarrow BD$	451. $AB \leftrightarrow DC$
452. A	453. B	454. C	455. D	456. E	457. F	458. G
459. H	460. I	461. J	462. K	463. L	464. M	465. N
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480. A	481. B	482. C	483. D	484. E	485. F	486. G
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508. A	509. B	510. C	511. D	512. E	513. F	514. G
515. H	516. I	517. J	518. K	519. L	520. M	521. N
522. O	523. P	524. Q	525. R	526. S	527. T	528. W
529. $AB \leftrightarrow DC$	530. $AC \leftrightarrow BC$	531. $BC \leftrightarrow AC$	532. $AB \leftrightarrow DC$	533. $AD \leftrightarrow CB$	534. $AC \leftrightarrow BD$	535. $AB \leftrightarrow DC$
536. A	537. B	538. C	539. D	540. E	541. F	542. G
543. H	544. I	545. J	546. K	547. L	548. M	549. N
550. O	551. P	552. Q	553. R	554. S	555. T	556. W
557. $AB \leftrightarrow DC$	558. $AC \leftrightarrow BC$	559. $BC \leftrightarrow AC$	560. $AB \leftrightarrow DC$	561. $AD \leftrightarrow CB$	562. $AC \leftrightarrow BD$	563. $AB \leftrightarrow DC$
564. A	565. B	566. C	567. D	568. E	569. F	570. G
571. H	572. I	573. J	574. K	575. L	576. M	577. N
578. O	579. P	580. Q	581. R	582. S	583. T	584. W
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592. A	593. B	594. C	595. D	596. E	597. F	598. G
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606. O	607. P	608. Q	609. R	610. S	611. T	612. W
613. $AB \leftrightarrow DC$	614. $AC \leftrightarrow BC$	615. $BC \leftrightarrow AC$	616. $AB \leftrightarrow DC$	617. $AD \leftrightarrow CB$	618. $AC \leftrightarrow BD$	619. $AB \leftrightarrow DC$
620. A	621. B	622. C	623. D	624. E	625. F	626. G
627. H	628. I	629. J	630. K	631. L	632. M	633. N
634. O	635. P	636. Q	637. R	638. S	639. T	640. W
641. $AB \leftrightarrow DC$	642. $AC \leftrightarrow BC$	643. $BC \leftrightarrow AC$	644. $AB \leftrightarrow DC$	645. $AD \leftrightarrow CB$	646. $AC \leftrightarrow BD$	647. $AB \leftrightarrow DC$
648. A	649. B	650. C	651. D	652. E	653. F	654. G
655. H	656. I	657. J	658. K	659. L	660. M	661. N
662. O	663. P	664. Q	665. R	666. S	667. T	668. W
669. $AB \leftrightarrow DC$	670. $AC \leftrightarrow BC$	671. $BC \leftrightarrow AC$	672. $AB \leftrightarrow DC$	673. $AD \leftrightarrow CB$	674. $AC \leftrightarrow BD$	675. $AB \leftrightarrow DC$
676. A	677. B	678. C	679. D	680. E	681. F	682. G
683. H	684. I	685. J	686. K	687. L	688. M	689. N
690. O	691. P	692. Q	693. R	694. S	695. T	696. W
697. $AB \leftrightarrow DC$	698. $AC \leftrightarrow BC$	699. $BC \leftrightarrow AC$	700. $AB \leftrightarrow DC$	701. $AD \leftrightarrow CB$	702. $AC \leftrightarrow BD$	703. $AB \leftrightarrow DC$
704. A	705. B	706. C	707. D	708. E	709. F	710. G
711. H	712. I	713. J	714. K	715. L	716. M	717. N
718. O	719. P	720. Q	721. R	722. S	723. T	724. W
725. $AB \leftrightarrow DC$	726. $AC \leftrightarrow BC$	727. $BC \leftrightarrow AC$	728. $AB \leftrightarrow DC$	729. $AD \leftrightarrow CB$	730. $AC \leftrightarrow BD$	731. $AB \leftrightarrow DC$
732. A	733. B	734. C	735. D	736. E	737. F	738. G
739. H	740. I	741. J	742. K	743. L	744. M	745. N
746. O	747. P	748. Q	749. R	750. S	751. T	752. W
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760. A	761. B	762. C	763. D	764. E	765. F	766. G
767. H	768. I	769. J	770. K	771. L	772. M	773. N
774. O	775. P	776. Q	777. R	778. S	779. T	780. W
781. $AB \leftrightarrow DC$	782. $AC \leftrightarrow BC$	783. $BC \leftrightarrow AC$	784. $AB \leftrightarrow DC$	785. $AD \leftrightarrow CB$	786. $AC \leftrightarrow BD$	787. $AB \leftrightarrow DC$
788. A	789. B	790. C	791. D	792. E	793. F	794. G
795. H	796. I	797. J	798. K	799. L	800. M	801. N
802. O	803. P	804. Q	805. R	806. S	807. T	808. W
809. $AB \leftrightarrow DC$	810. $AC \leftrightarrow BC$	811. $BC \leftrightarrow AC$	812. $AB \leftrightarrow DC$	813. $AD \leftrightarrow CB$	814. $AC \leftrightarrow BD$	815. $AB \leftrightarrow DC$
816. A	817. B	818. C	819. D	820. E	821. F	822. G
823. H	824. I	825. J	826. K	827. L	828. M	829. N
830. O	831. P	832. Q	833. R	834. S	835. T	836. W
837. $AB \leftrightarrow DC$	838. $AC \leftrightarrow BC$	839. $BC \leftrightarrow AC$	840. $AB \leftrightarrow DC$	841. $AD \leftrightarrow CB$	842. $AC \leftrightarrow BD$	843. $AB \leftrightarrow DC$
844. A	845. B	846. C				

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