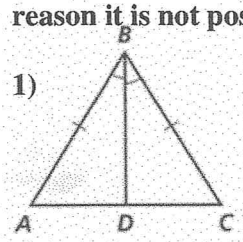
Geometry **NAME** _____

Worksheet – Congruent Triangles

Date _____ **HR** _____

a) Determine whether the following triangles are congruent.
b) If they are, name the triangle congruence (pay attention to proper correspondence when naming the triangles) and then identify the Theorem or Postulate (SSS, SAS, ASA, AAS, HL) that supports your conclusion.
c) Be sure to show any additional congruence markings you used in your reasoning.
d) If the triangles cannot be proven congruent, state "not possible." Then given the reason it is not possible.

1)

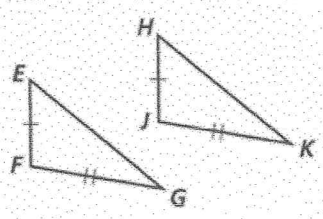


Congruence:

ΔABD ≅ Δ _____

Reason:

2)

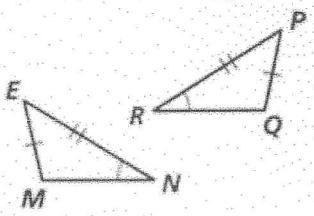


Congruence:

ΔEFG ≅ Δ _____

Reason:

3)

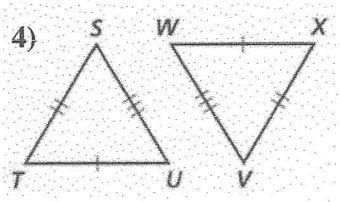


Congruence:

ΔEMN ≅ Δ _____

Reason:

4)

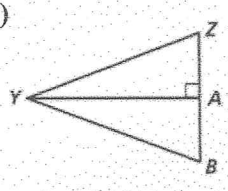


Congruence:

ΔSTU ≅ Δ _____

Reason:

5)

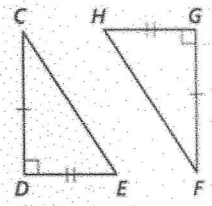


Congruence:

ΔYZA ≅ Δ _____

Reason:

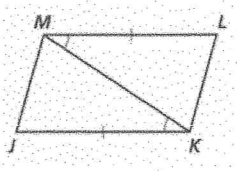
6)



Congruence:

ΔCDE ≅ Δ _____

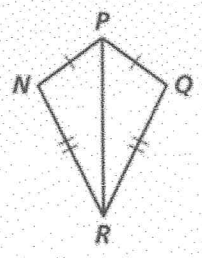
Reason:

7) 

Congruence:

ΔKJM ≅ Δ _____

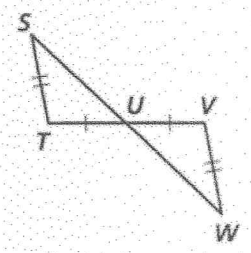
Reason:

8) 

Congruence:

ΔNPR ≅ Δ _____

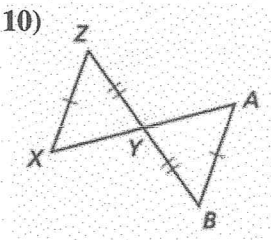
Reason:

9) 

Congruence:

ΔSTU ≅ Δ _____

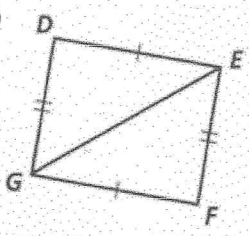
Reason:

10) 

Congruence:

ΔXYZ ≅ Δ _____

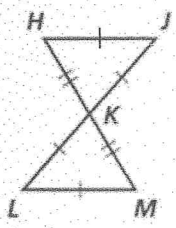
Reason:

11) 

Congruence:

ΔDEG ≅ Δ _____

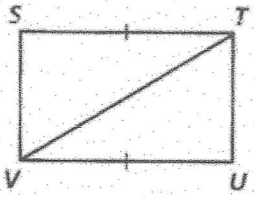
Reason:

12) 

Congruence:

ΔHJK ≅ Δ _____

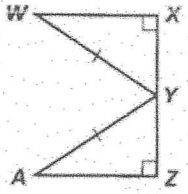
Reason:

13) 

Congruence:

ΔSTV ≅ Δ _____

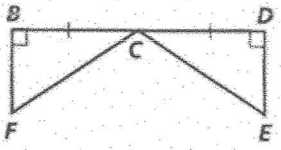
Reason:

14) 

Congruence:

ΔWXY ≅ Δ _____

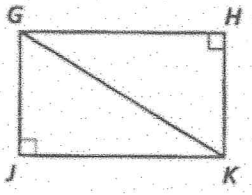
Reason:

15) 

Congruence:

ΔBCF ≅ Δ _____

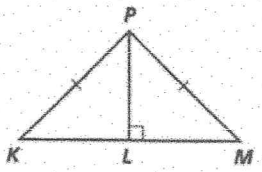
Reason:

16) 

Congruence:

ΔGJK ≅ Δ _____

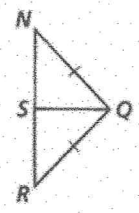
Reason:

17) 

Congruence:

ΔKLP ≅ Δ _____

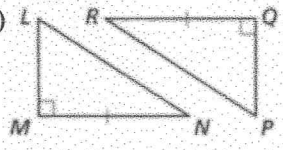
Reason:

18) 

Congruence:

ΔNSQ ≅ Δ _____

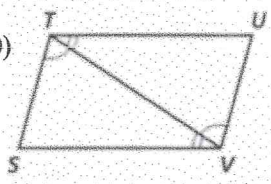
Reason:

19) 

Congruence:

ΔLMN ≅ Δ _____

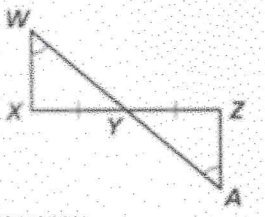
Reason:

20) 

Congruence:

ΔSTV ≅ Δ _____

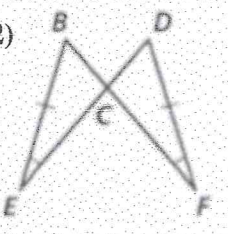
Reason:

21) 

Congruence:

ΔWXY ≅ Δ _____

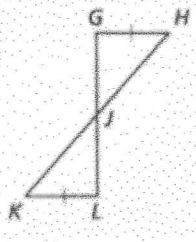
Reason:

22) 

Congruence:

ΔBCE ≅ Δ _____

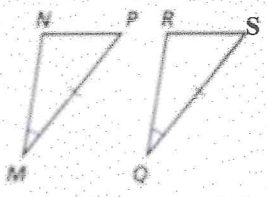
Reason:

23) 

Congruence:

ΔGHJ ≅ Δ _____

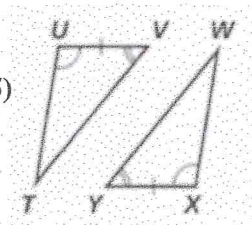
Reason:

24) 

Congruence:

ΔNPM ≅ Δ _____

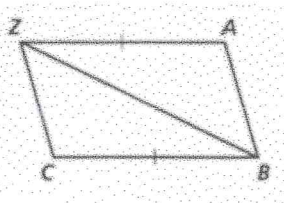
Reason:

25) 

Congruence:

$\Delta TUV \cong \Delta$ _____

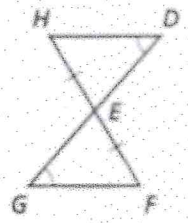
Reason:

26) 

Congruence:

$\Delta BCZ \cong \Delta$ _____

Reason:

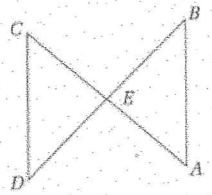
27) 

Congruence:

$\Delta EFG \cong \Delta$ _____

Reason:

Use the given information to mark the diagram appropriately. Name the triangle congruence (pay attention to proper correspondence when naming the triangles) and then identify the Theorem or Postulate (SSS, SAS, ASA, AAS, HL) that would be used to prove the triangles congruent. If the triangles cannot be proven congruent, state "not possible."

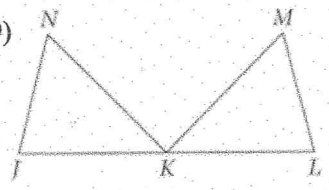
28) 

Given: $\overline{CD} \cong \overline{AB}$; $\angle B \cong \angle D$

Congruence:

$\Delta CDE \cong \Delta$ _____

Reason:

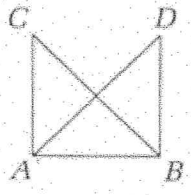
29) 

Given: $\overline{JN} \cong \overline{LM}$; $\overline{NK} \cong \overline{MK}$; $\angle N \cong \angle M$

Congruence:

$\Delta JKN \cong \Delta$ _____

Reason:

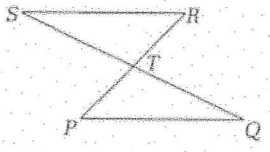
30) 

Given: $\overline{AC} \cong \overline{BD}$; $\overline{AD} \cong \overline{BC}$

Congruence:

$\Delta ABC \cong \Delta$ _____

Reason:

31) 

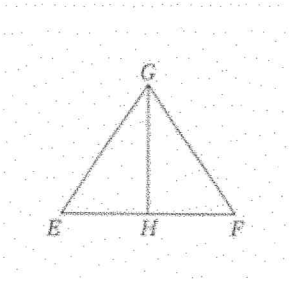
Given: $\overline{SQ}$ and $\overline{PR}$ bisect each other

Congruence:

$\Delta RST \cong \Delta$ _____

Reason:

32)



Given: $\overline{GH}$ bisects $\angle EGF$;
$\overline{EG} \cong \overline{FG}$

Congruence: $\Delta EGH \cong \Delta$ _____

Reason:

Now choose one of the problems from 28-32 and create a flow chart proof. Then transform your flow chart proof into a 2 column proof. Your "given" will be the "Given" from the problem and your "prove" will be the "Congruence" statement you created.