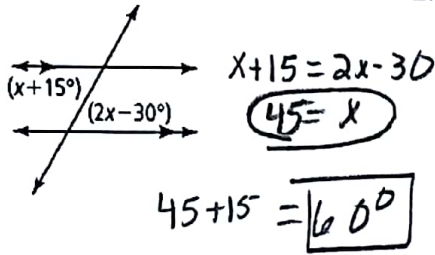
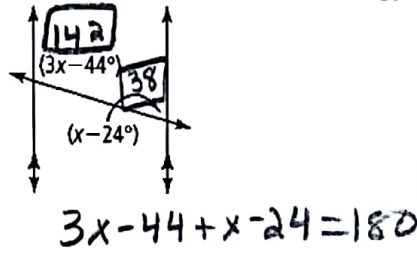


Directions: Find the value of each variable. Then find the measure of each labeled angle.

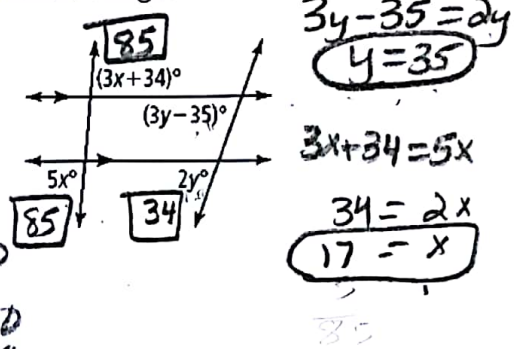
1.



2.

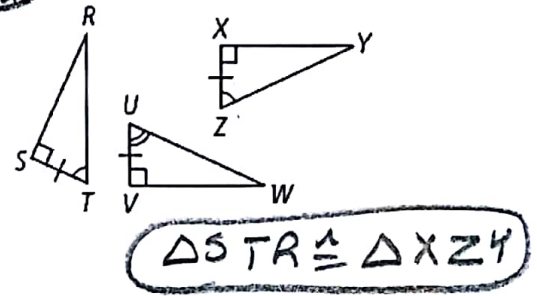
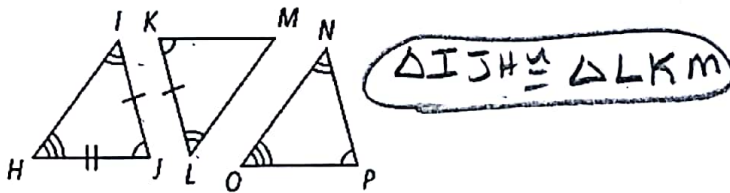


3.



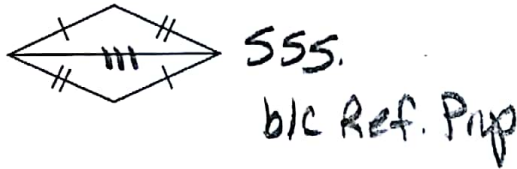
Directions: Name two triangles that are congruent by ASA.

4.



Directions: Would you use SSS or SAS to prove these triangles congruent? If there is not enough information to prove the triangles congruent by SSS or SAS, write not enough information. Explain your answer.

6.

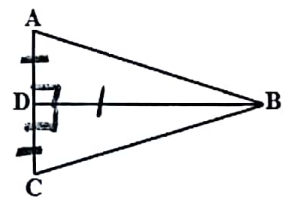


7.

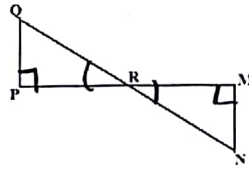


8. Given: \overline{BD} is the perpendicular bisector of \overline{AC}
 Prove: $\triangle BAD \cong \triangle BCD$

| Statements | Reasons |
|---|-----------------------------------|
| 1) \overline{BD} is the perpendicular bisector of \overline{AC} . | 1) Given |
| 2) $\overline{AD} \cong \overline{CD}$ | 2) Definition of segment bisector |
| 3) $\angle ADB$ and $\angle CDB$ are right \angle . | 3) Definition of perpendicular |
| 4) $\overline{BD} \cong \overline{BD}$ | 4) Reflex. Prop. |
| 5) $\angle ADB \cong \angle CDB$ | 5) All rt \angle are \cong |
| 6) $\triangle BAD \cong \triangle BCD$ | 6) SAS. |



- 9 Given: $\angle P$ and $\angle M$ are right angles.
 R is the midpoint of PM .
 Prove: $\triangle PQR \cong \triangle MNR$



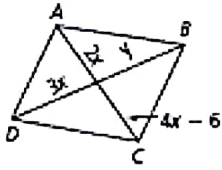
①
 ② $\angle P = \angle M$

① Given

See Attached sheet.

Directions: Find the values of the variables in each parallelogram (14 is a trapezoid)..

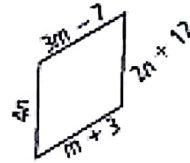
10.



$2x = 4x - 6$
 $6 = 2x$
 $3 = x$

$3(3) = y$
 $9 = y$

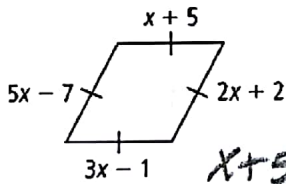
11.



$3m - 7 = m + 3$
 $2m = 10$
 $m = 5$

$4n = 2n + 12$
 $2n = 12$
 $n = 6$

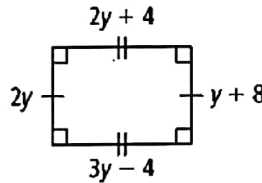
12.



$x + 5 = 3x - 1$
 $6 = 2x$
 $3 = x$

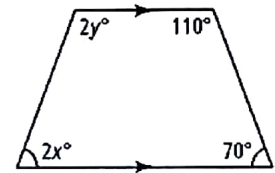
$TR = 2$

13.



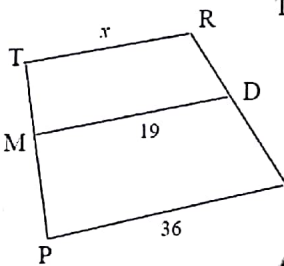
$2y = y + 8$
 $y = 8$

14.



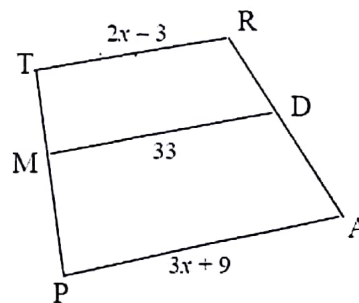
$2x = 70$
 $x = 35$
 $2y = 110$
 $y = 55$

15.



$19 = \frac{1}{2}(x + 36)$
 $38 = x + 36$
 $2 = x$

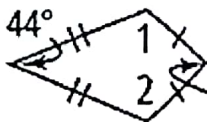
16.



$x = 12$
 $TR = 21$
 $PA = 45$

$33 = \frac{1}{2}[2x - 3 + 3x + 9]$
 $66 = 5x + 6$
 $60 = 5x$
 $12 = x$

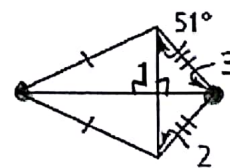
17.



$44 + 80 + 2x = 360$
 $124 + 2x = 360$
 118

$\angle 1 = 118$ $\angle 2 = 118$

18.



$\angle 1 = 90^\circ$ $\angle 2 = 51^\circ$
 $\angle 3 = 39$

9

Statements

Reasons.

① $\angle P + \angle M$ are rt \angle .
R is midpt \overline{PM}

① Given

② $\angle P \cong \angle M$

② All Right \angle are \cong .

③ $\angle ORP \cong \angle MRN$

③ Vertical \angle are \cong

④ $PR = MR$

④ Defn midpoint

⑤ $\overline{PR} \cong \overline{MR}$

⑤ Defn \cong segments

⑥ $\triangle OPR \cong \triangle NMR$

⑥ ASA.

Are the following parallelograms? Explain why or why not. (For example, draw or state a counterexample if not.)

| | | |
|--|---|--|
| <p>19.</p> <p>Yes. $\Delta \cong$ by SAS SO opp. sides are SO it's \square</p> | <p>20.</p> <p>NOT Cons. int & NOT Supp.</p> | <p>21.</p> <p>YES. CONVERSE OF AH INT & THM.</p> |
|--|---|--|

Point T is the incenter of ΔPQR .

25. If Point T is the incenter, then Point T is the point of concurrency of

the angle bisectors.

26. $ST =$ 15

27. If $TU = (2x - 1)$, find x .

$$2x - 1 = 15$$

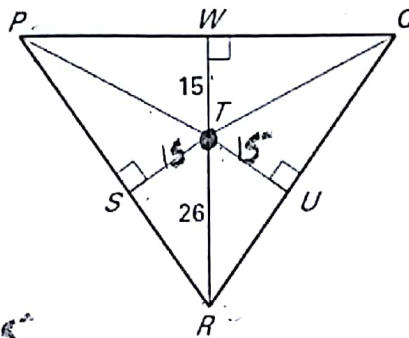
$$2x = 16$$

$$x = 8$$

$$x = \underline{8}$$

28. If $m\angle PRT = 24^\circ$, then $m\angle QRT =$ 24°

29. If $m\angle RPQ = 62^\circ$, then $m\angle RPT =$ 31°



Equal dist
from sides.

Point G is the centroid of ΔABC , $AD = 8$, $AG = 10$, $BE = 10$, $AC = 16$ and $CD = 18$. Find the length of each segment.

30. If Point G is the centroid, then Point T is the point of concurrency of

the medians.

31. $DB =$ 8

32. $EA =$ 15

33. $CG =$ 12

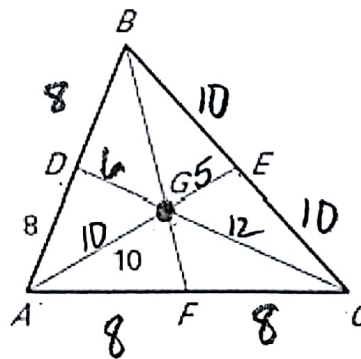
34. $BA =$ 16

35. $GE =$ 5

36. $GD =$ 6

37. $BC =$ 20

38. $AF =$ 8



$\frac{2}{3} (18)$