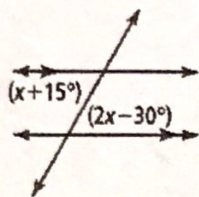


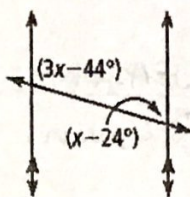
Directions: Find the value of each variable. Then find the measure of each labeled angle.

1.



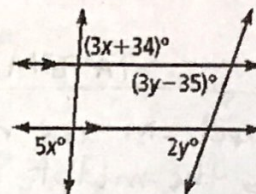
$x = 45$

2.



$x = 62$

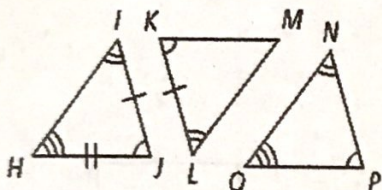
3.



$x = 17$ $y = 35$

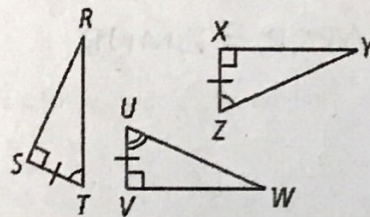
Directions: Name two triangles that are congruent by ASA.

4.



$\triangle IJK \cong \triangle KLM$

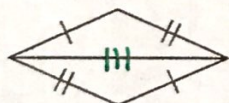
5.



$\triangle STR \cong \triangle XYZ$

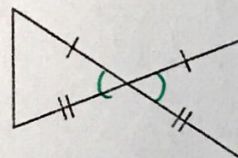
Directions: Would you use SSS or SAS to prove these triangles congruent? If there is not enough information to prove the triangles congruent by SSS or SAS, write *not enough information*. Explain your answer.

6.



$SSS \cong$

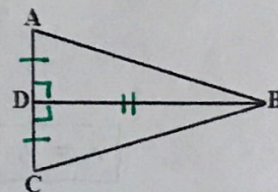
7.



$SAS \cong$

8. Given: \overline{BD} is the perpendicular bisector of \overline{AC}

Prove: $\triangle BAD \cong \triangle BCD$



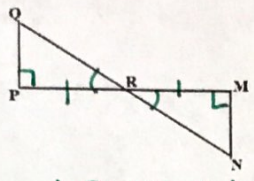
Statements

Reasons

- 1) \overline{BD} is the perpendicular bisector of \overline{AC} .
- 2) $\overline{AD} \cong \overline{DC}$
- 3) $\angle ADB$ and $\angle CDB$ are right
- 4) $\angle ADB \cong \angle CDB$
- 5) $\overline{DB} \cong \overline{DB}$
- 6) $\triangle BAD \cong \triangle BCD$

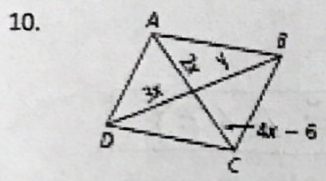
- 1) Given
- 2) Def of bisector
- 3) Def of \perp
- 4) All right \angle s are \cong
- 5) Reflexive prop.
- 6) $SAS \cong$

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

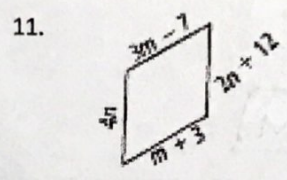


STATEMENT	REASON
① $\angle P$ and $\angle M$ are right \angle s R is the midpt. of \overline{PM} .	① Given
② $\angle P \cong \angle M$	② All right \angle s are \cong
③ $\overline{PR} \cong \overline{RM}$	③ Def of midpoint
④ $\angle QRP \cong \angle NRM$	④ Vertical \angle Post.
⑤ $\triangle PQR \cong \triangle MNR$	⑤ ASA \cong

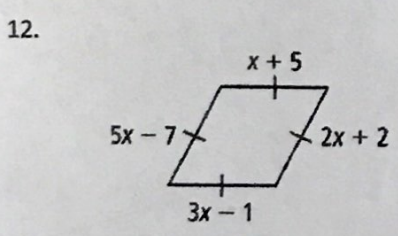
Directions: Find the values of the variables in each parallelogram (14 is a trapezoid)..



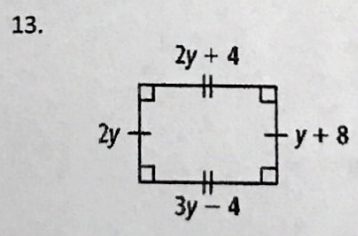
$x = 3$
 $y = 9$



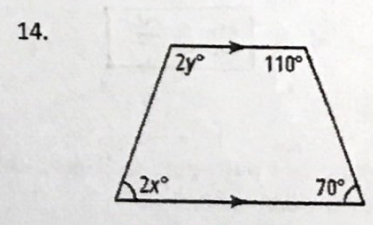
$m = 5$



$x = 3$



$y = 8$

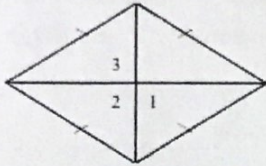


$x = 35$
 $y = 55$

15. a) In order for a parallelogram to be a rectangle, what must you know about the diagonals?
 b) In order for a parallelogram to be a rhombus, what must you know about the diagonals?

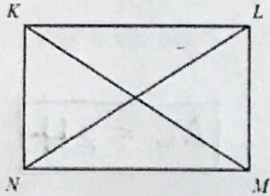
a) diagonals must be \cong (and bisect each other)
 b) diagonals must be \perp (and bisect each other)

16. In the rhombus, $m\angle 1 = 9x$, $m\angle 2 = y + 3x$ and $m\angle 3 = 45z$. Find the value of each variable.
The diagram is not to scale.



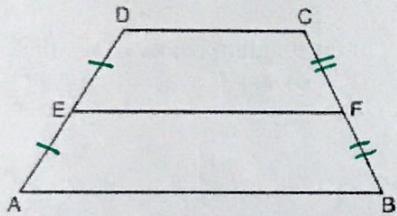
$$x = 10 \quad y = 60 \quad z = 2$$

17. In rectangle $KLMN$, $KM = 7x + 20$ and $LN = 55$. Find the value of x .



$$x = 5$$

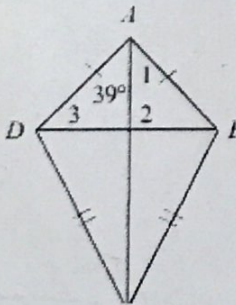
18. In the diagram below, \overline{EF} is the median of trapezoid $ABCD$.



$$x = 5$$

If $AB = 5x - 9$, $DC = x + 3$, and $EF = 2x + 2$, what is the value of x ?

19. Find the missing angles in the kite. The diagram is not to scale.



$$m\angle 1 = 39^\circ$$

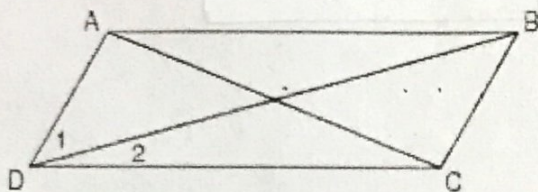
$$m\angle 2 = 90^\circ$$

$$m\angle 3 = 51^\circ$$

20. The diagonals of a quadrilateral are congruent but do not bisect each other. This quadrilateral is

- 1) an isosceles trapezoid
- 2) a parallelogram
- 3) a rectangle
- 4) a rhombus

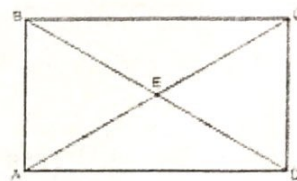
21. In the diagram below of parallelogram $ABCD$ with diagonals \overline{AC} and \overline{BD} , $m\angle 1 = 45$ and $m\angle DCB = 120$.



What is the measure of $\angle 2$?

$m\angle 2 = 15^\circ$

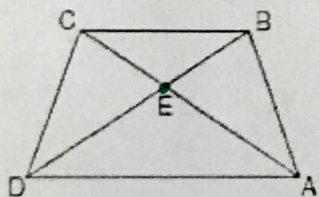
22. As shown in the diagram of rectangle $ABCD$ below, diagonals \overline{AC} and \overline{BD} intersect at E .



If $\overline{AE} = x + 2$ and $\overline{BD} = 4x - 16$, then the length of \overline{AC} is

$AC = 24$

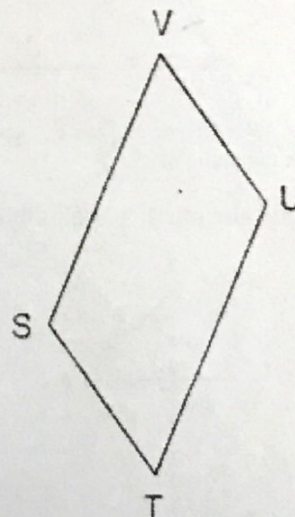
23. In the diagram of trapezoid $ABCD$ below, diagonals \overline{AC} and \overline{BD} intersect at E and $\triangle ABC \cong \triangle DCB$.



Which statement is true based on the given information?

- ~~1) $\overline{AC} \cong \overline{BC}$~~
- ~~2) $\overline{CD} \cong \overline{AD}$~~
- ~~3) $\angle CDE \cong \angle BAD$~~
- 4) $\angle CDB \cong \angle BAC$

24. In the diagram below of parallelogram $STUV$, $\overline{SV} = x + 3$, $\overline{VU} = 2x - 1$, and $\overline{TU} = 4x - 3$.



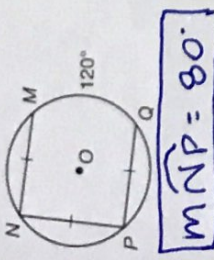
What is the length of \overline{SV} ?

$SV = 5$

GEOMETRY PART 2 STUDY GUIDE

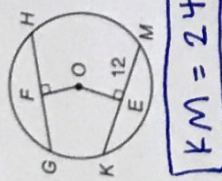
In each circle, O is the center. Find each measure.

1. $m\widehat{NP}$



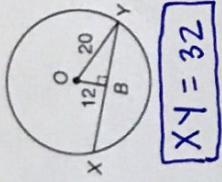
$m\widehat{NP} = 80^\circ$

2. KM



$KM = 24$

3. XY



$XY = 32$

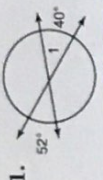
4. Suppose a chord is 20 inches long and is 24 inches from the center of the circle. Find the length of the radius.

$r = 26$

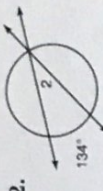
5. Suppose a chord of a circle is 5 inches from the center and is 24 inches long. Find the length of the radius.

$r = 13$

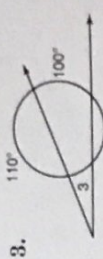
Find the measure of each numbered angle.



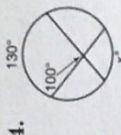
$m\angle 1 = 46^\circ$



$m\angle 2 = 67^\circ$



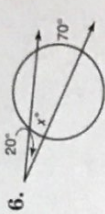
$m\angle 3 = 15^\circ$



$x = 70^\circ$

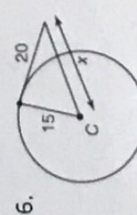


$z = 74^\circ$

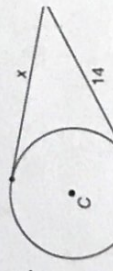


$x = 30^\circ$

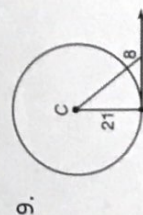
For each in circle C, find the value of x. Assume segments that appear to be tangent are tangent.



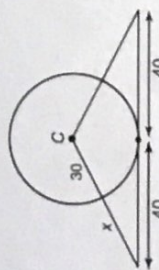
$x = 25$



$x = 14$



$x = 20$



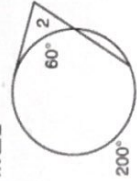
$x = 20$

1. $m\angle 1$



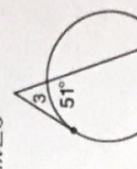
$m\angle 1 = 140^\circ$

2. $m\angle 2$



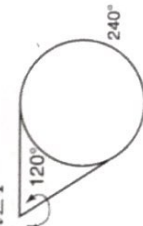
$m\angle 2 = 70^\circ$

3. $m\angle 3$



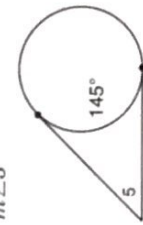
$m\angle 3 = 52^\circ$

4. $m\angle 4$



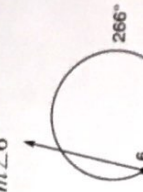
$m\angle 4 = 60^\circ$

5. $m\angle 5$



$m\angle 5 = 35^\circ$

6. $m\angle 6$



$m\angle 6 = 133^\circ$

HN Math III: Unit 6 – Day 13

Find the coordinates of the center of the circle and the measure of the radius given:

1) $(x+1)^2 + y^2 = 121$

$C(-1, 0) \quad r = 11$

2) $(x-4)^2 + (y-1)^2 = .49$

$C(4, 1) \quad r = 7$

Write an equation of a circle with the given center that passes thru the given point.

3) center: $(2, 3)$ point: $(0, 5)$

$(x-2)^2 + (y-3)^2 = 8$

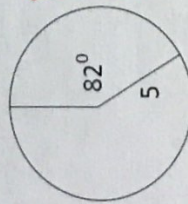
Given the two endpoints of a diameter, find the center and radius of a circle.

4) endpoint: $(3, 6)$ and endpoint: $(-1, -2)$

$C = (1, 2)$
 $r = 2\sqrt{5}$

Find the length of the minor arc.

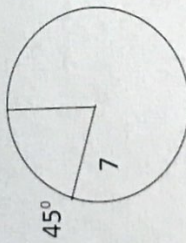
5)



$\frac{41\pi}{18}$

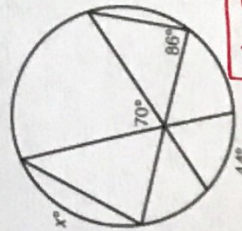
Find the area of shaded portion.

6)



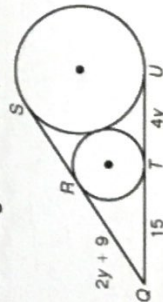
$\frac{\pi}{4}$

7) Find x.



$x = 76$

8) In the figure, segments that appear to be tangent are tangent. Find QS.

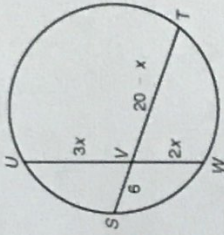


$QS = 27$

Name _____

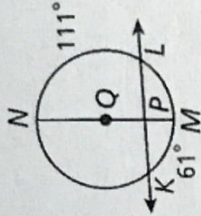
Find LN.

9) What is the length of \overline{UW} ?

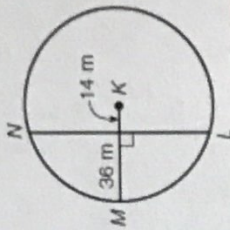


$UW = 20$

10) Calculate the $m\angle NPL$.



$m\angle NPL = 86$



$LN = 96$

11) Find the standard form, center, and radius of the following circles:

a) $x^2 + y^2 - 4x + 10y - 7 = 0$

$C(2, -5) \quad r = 6$

b) $x^2 + 8x + y^2 + 5y - 2 = 0$

$C(-4, -2.5)$
 $r = \sqrt{97}/2$

Different animals have different fields of view. Humans can generally see a 180° arc in front of them. Horses can see a 215° arc. A horse and rider are in heavy fog, so they can see for only 25 yards in any direction. Round your answers to Exercises 5 and 6 to the nearest square yard.

- Find the area of the rider's field of view.
- Find the area of the horse's field of view.

982 yd^2
 1173 yd^2