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Date _____

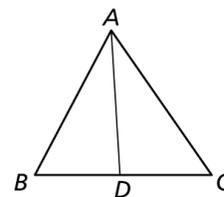
Chapter 5 & 6 – Final Review

Identify each statement as either true (T) or false (F) by circling the correct choice.

- 1) T F Every point on a median in a triangle is equally distant from the sides of an angle.
- 2) T F The circumcenter is equally distant from all three sides of a triangle.
- 3) T F The centroid of a triangle divides each median into two parts, so that the shortest part is half the largest part..
- 4) T F In a right triangle, the circumcenter is located at the midpoint of the side opposite the right angle.
- 5) T F If a point is equally distant from the endpoints of a segment, then it must be the midpoint of the segment.
- 6) T F The incenter of a triangle is also the “center of gravity” of the triangle..
- 7) T F A geometric construction uses a protractor and a ruler.
- 8) T F The shortest distance from a point to a line is the distance measured along the perpendicular from the point to the line.
- 9) T F Every point on an altitude in a triangle is equally distant from the sides of an angle.
- 10) T F The circumcenter is equally distant from all three sides of a triangle.
- 11) T F A rhombus is a parallelogram with all of its sides equal in length.
- 12) T F In a right triangle the orthocenter is located at the vertex of the right angle.
- 13) T F If a point is equally distant from the endpoints of a segment, then it must be the midpoint of the segment.

Use the diagram to find the indicated angle measure.

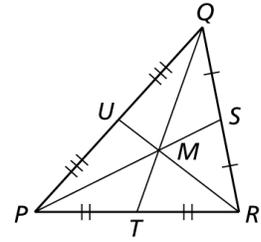
- 14) Given $m\angle B = 57^\circ$, $m\angle C = 51^\circ$, and \overline{AD} bisects $\angle BAC$, find $m\angle ADC$.



- 15) Given $m\angle B = 66^\circ$, $m\angle BAD = 34^\circ$, and \overline{AD} bisects $\angle BAC$, find $m\angle DAC$.

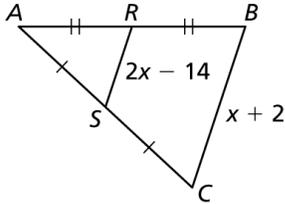
16) In $\triangle PQR$, $SP = 78$, and $UM = 19$. Find SM , MR , and UR .

$SM =$ _____, $MR =$ _____, and $UR =$ _____.

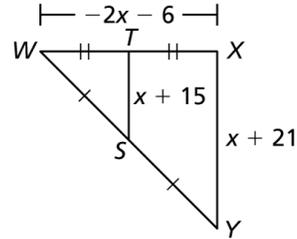


Find the given measurement.

17) SR



18) TS



19) List the angles of $\triangle ABC$ from smallest to largest.

$$AB = 3, BC = 4, CA = 5$$

20) List the sides of $\triangle ABC$ from shortest to longest.

$$m\angle A = 100, m\angle B = 20, m\angle C = 60$$

For #14- 17, state whether each statement is always true (a), sometimes true (b), or never true (c).

21) The centroid is in a triangle

22) The centroid, circumcenter, and orthocenter are the same point.

23) A quadrilateral with diagonals that do not bisect each other is a parallelogram.

24) A quadrilateral with diagonals that are perpendicular is a parallelogram.

25) A parallelogram is a trapezoid.

26) A square is a rhombus.

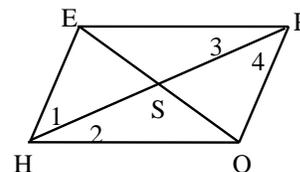
- 27) Birdy McFly is designing a large triangular hang glider. She needs to locate the center of gravity for her glider. Which point does she need to locate?
- 28) Birdy wishes to decorate her glider with the largest possible circle within her large triangular hang glider. She needs to locate which point of concurrency?
- 29) Architect Lloyd Frank has designed a round window to be centered on the triangular wall of his latest house design. He wishes the circular frame to be 40 cm from each edge of the isosceles triangle. How should he locate the center of the circle?

HOPE is a parallelogram. Find the lengths or angle measures.

30) If $m\angle HEP = 113^\circ$, then $m\angle EPO =$

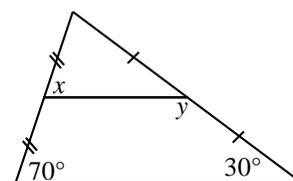
31) If $HS = 5$, then $HP =$

32) If $m\angle 3 = 25^\circ$ and $m\angle 4 = 40^\circ$, then $m\angle 2 =$

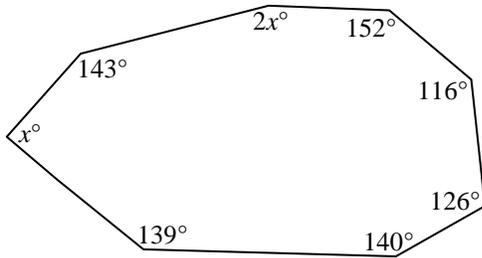


33) In trapezoid WXYZ, $\overline{WX} \parallel \overline{YZ}$, and $\overline{YZ} = 4.25$ cm. The midsegment of the trapezoid is 2.75 cm. Find WX.

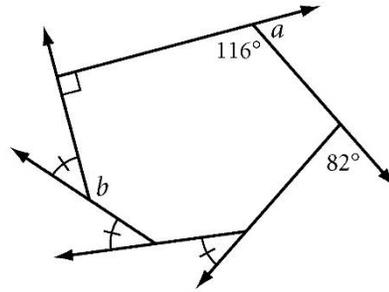
34) $x + y =$



35) Find the value of x . Show all work.



36) Find each lettered angle measure.

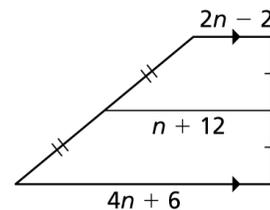


$a = \underline{\hspace{2cm}}$ $b = \underline{\hspace{2cm}}$

37) Which of the following facts **is not always true** about a **parallelogram**.

- a. opposite sides are parallel
- b. diagonals bisect each other
- c. consecutive angles are supplementary
- d. diagonals are congruent
- e. opposite sides are congruent

38) Find the length of the midsegment of the trapezoid. Show all work.

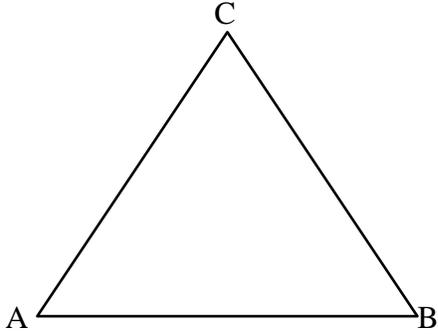


Midsegment length = $\underline{\hspace{2cm}}$

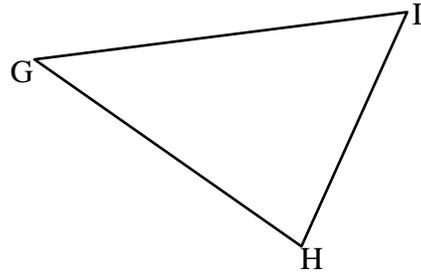
39) How many angles does a convex polygon have if the sum of all of its angles is 3960° ?

40) In parallelogram $RSTU$, \overline{RU} is 3 cm shorter than \overline{RS} . The perimeter of the parallelogram is 42 cm. Find RS and RU .

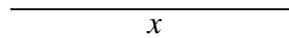
43) Construct the angle bisector \overline{AD} in $\triangle ABC$.



44) Construct the altitude \overline{IJ} in $\triangle GHI$.



45) Given the following, construct a $\triangle CAT$ with length y as the perimeter and x the length of the base.



46) Given \overline{QR} and $\angle Q$, construct a rhombus QRST with sides with length of $\frac{1}{2}QR$.

