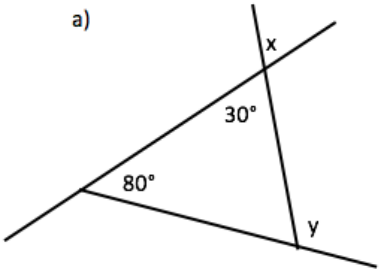
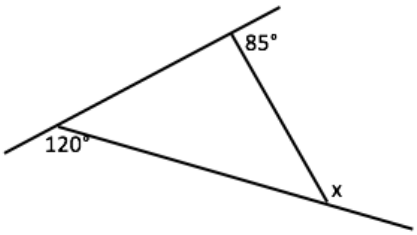
U7D6 MPM 1DI **Geometry Worksheet**

1. Determine the value of each unknown. Justify your answers.

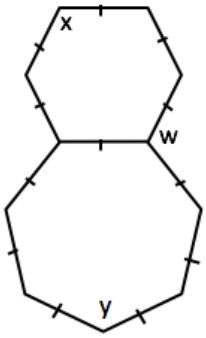
a)



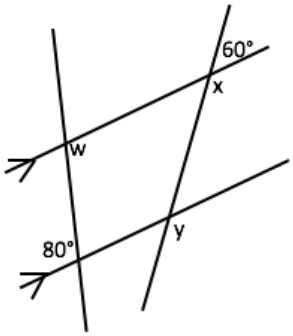
b)



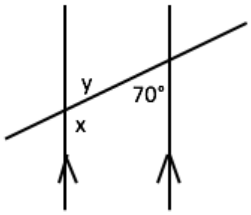
c)



d)



e)



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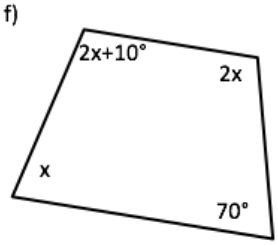
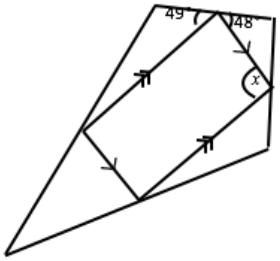
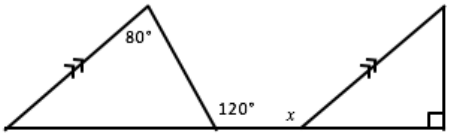


g)

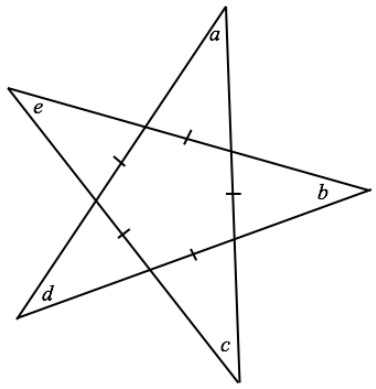


h)

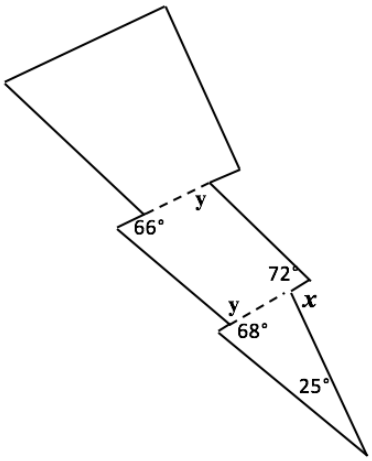


U7D6 MPM 1DI **Geometry Worksheet**

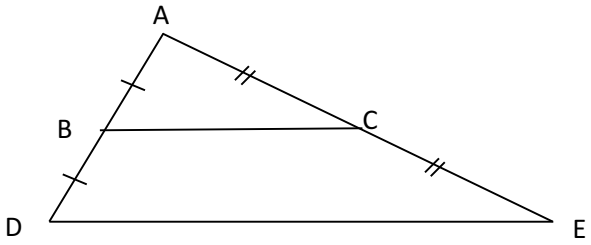
i) Determine the sum of angles a b c, d and e.



j) Solve for x and y.



2. How many sides does a polygon have if the sum of the interior angles is 2340°?
3. A regular polygon has exterior angles that measure 10°. How many sides does the polygon have?
4. In a regular polygon, each interior angle measures 150°. How many sides does the polygon have?
5. The diagonals of a quadrilateral bisect each other at 90°. The diagonals are not of equal length. What special quadrilateral satisfies these conditions?
6. Consider the diagonals of a kite and a rectangle. State what is the same and what is different about the intersection of the diagonals of a kite and a rectangle.
7. Given the following diagram. The height of ΔADE is 10 cm. The length of side DE is 15 cm. B is the midpoint of AD, C is the midpoint of AE.
   a) State TWO relationships that exist between line segment BC and line segment DE.
   b) Calculate the area of ΔABC.



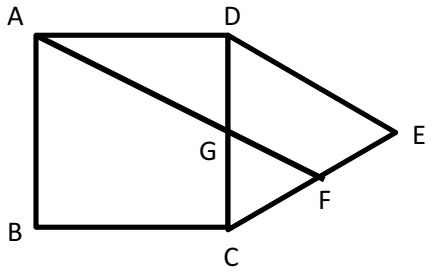
8. a) Draw a scalene triangle. Label the vertices P, Q, and R. Draw a median of the triangle at P.

   b) Label the median PM. If the area of ΔPQR is 50 cm^2, what is the area of ΔPMR?

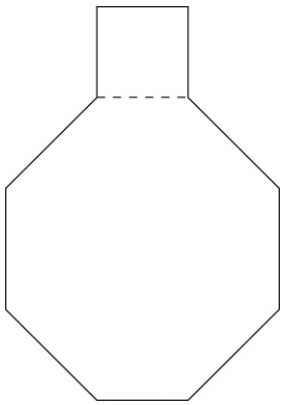
U7D6 MPM 1DI **Geometry Worksheet**

9. Quadrilateral ABCD is a square. Triangle CDE is equilateral. F and G are midpoints. If CF is 3 cm,
   a) Determine the length of DE.

   b) Determine angle DAG.



10. Determine the sum of interior angles for the composite shape to the right.



Answers:

1. a) x = 30° (OAT), y = 110° (EAT) b) X = 155° (PEAST)
c) x = 120° (ASPT), y = 128.6° (ASPT), w = 111.4° (x+y+w=360°)
d) x = 120° (Supplementary), y = 120° (TPT-Corresponding Angles), w = 80° (TPT-Alternate Angles)
e) x = 110° (TPT- Co-Interior Angles are Supplementary), y = 70° (TPT- Alternate Angles)
f) x = 56° (ASQT) g) x = 97° (Straight Angle, TPT- Co-Interior Angles)
h) x = 140° (EAT, TPT- Corresponding Angles, supp)
i) sum= 180° (PEAST)or(ASPT, supp)&(ITT, ASTT) j) x = 93° (EAT) y = 111° (ASQT)
2. 15 sides (ASPT)
3. 36 sides (PEAST)
4. 12 sides (Supp, PEAST)
5. Rhombus
6. The diagonals of a rectangle bisect each other, the diagonals of a kite do not bisect each other (unless the kite is rhombus). The diagonals of a kite are perpendicular but the diagonals of a rectangle are only perpendicular if the rectangle is a square. A kite and a rectangle both have two diagonals but the diagonals of a kite have nothing in common with the diagonals of a rectangle.
7. a) BC is half as long as DE. BC is parallel to DE. b) BC = 7.5 cm, height is 5 cm, Area is 18.75 cm^2.
8. 25 cm^2
9. a) 6cm (since F is a midpoint of CE, CE should be twice the length of CF and since ΔCDE is equilateral, DE will be equal to CE) b) ∡DAG = 30° (GF is a mid-segment of ΔCDE so GF||DE and ∡AGD=∡CDE=60° (TPT-Alternate Angles), ∡ADG is 90° since ABCD is a square using ASTT we find ∡DAG.
10. 1440° (ASPT)