Unit #5 – Geometry
Progress Check

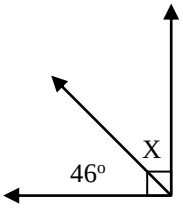
MPM1D1

The purpose of the progress check is to diagnose areas that you need more practice with before the test.

1. Review your notes before trying the questions in this package.
2. Answer the questions on this handout. Treat it like a test. DO NOT look at the answers until you have finished all of the questions.
3. Use the answers provided to check and see how you did.
4. Go to the course website (**http://sites.google.com/a/hdsb.ca/TAB-MPM1D1**) if you need to see the full worked out solutions (click on Unit #4).
5. Use the additional review questions provided in the textbook (see unit outline) to practice more questions like the ones you had trouble with in this package.
6. Although this progress check contains a wide selection of questions from this unit, it does not cover ALL of the possible questions from the unit.

1. Calculate the missing values in the following diagrams. Show all work and state the theorem used.

a)



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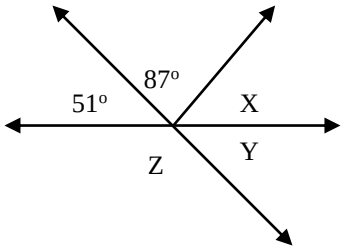

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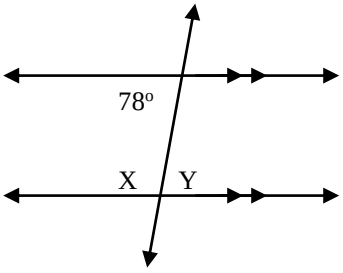

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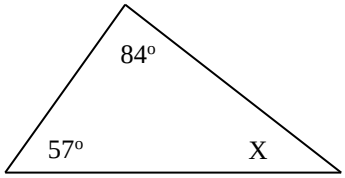

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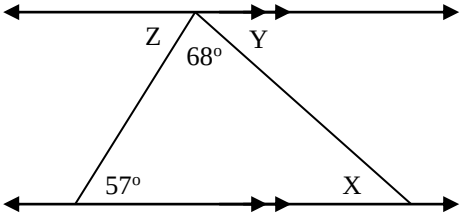

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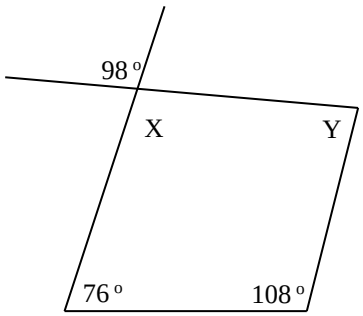

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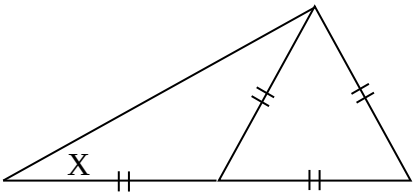

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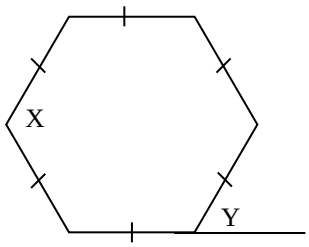
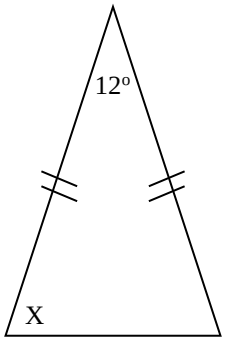


2. What is the **sum of the interior angles** in a shape with 24 sides?

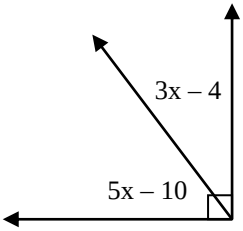
3. How many **sides** does a polygon have if the **sum of the interior angles** is 2700^{o}?

4. Explain, **in words**, how you would determine the measure of angle x.



5. Solve for x in each of the following diagrams and then calculate each of the missing angles. Show all of your work and state which theorems you used.

a)



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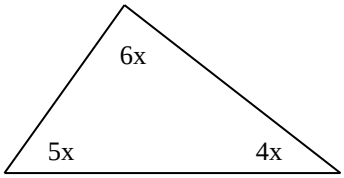

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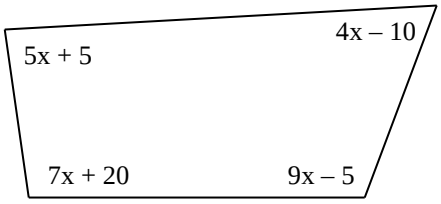

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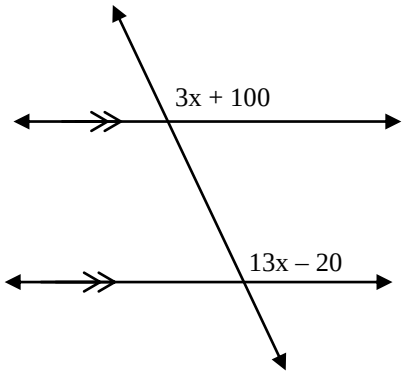

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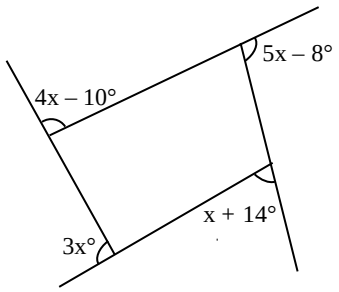

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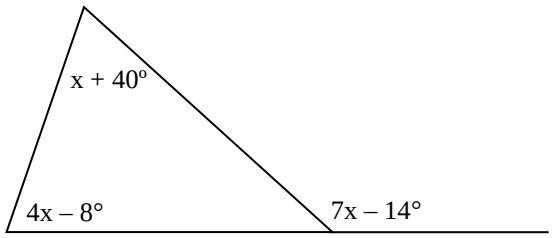
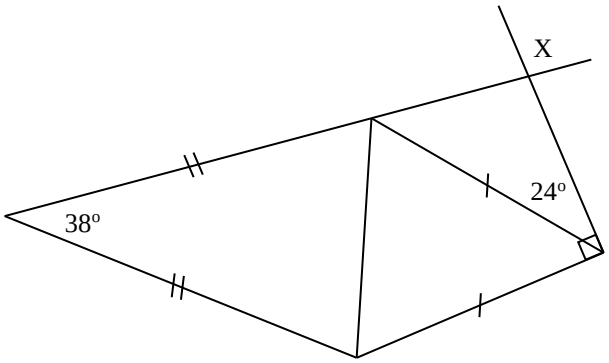
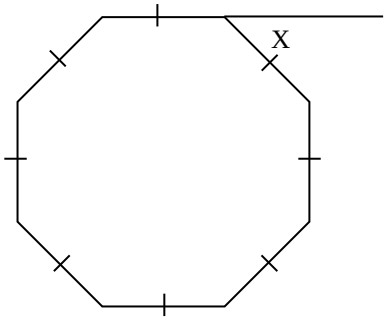


6. Determine the value of X in the following diagram. Show all of your work, including any other angles that you calculated in order to solve.



7. Calculate the value of X in the following diagram. Show all work and state what theorems you used.

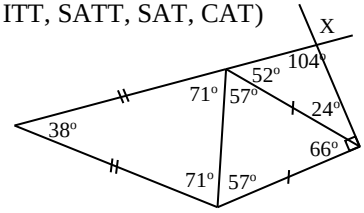


8. The angles in a quadrilateral are consecutive odd numbers. Determine the measure of each angle.

9. The first exterior angle of a triangle is ten less than the second. The third is half of the first angle. Determine the measure of each exterior angle.

Answers:

1a] X = 44º (CAT) 1b] X = 42º (SAT), Y = 51º (OAT), Z = 129º (SAT) 1c] X = 102º (C or SAT), Y = 78º (Z)
1d] X = 39º (SATT) 1e] X = 55º (SATT), Y = 55º (Z), Z = 57º (Z) 1f] X = 98º (OAT), Y = 78º (QUAD)
1g] X = 30º (ITT, SATT) 1h] X = 120º (SAP), Y = 60º (SAT) 2] 3960º (SAP) 3] 17 sides (SAP)
4] Mark the missing angle as X (ITT). Add the three angles together and set it equal to 180º (SAT). Solve the equation for X by collecting like terms, subtracting 12 from both sides, and dividing by 2.
5a] X = 13º (CAT), Angles = 55º, 35º 5b] X = 12º (SATT), Angles = 60º, 72º, 48º
5c] X = 14º (QUAD), Angles = 118º, 75º, 46º, 121º 5d] X = 12º (F), Angles = 136º, 136º
5e] X = 28º (SEAT), Angles = 84º, 102º, 132º, 42º 5f] X = 23º (EAT), Angles = 84º, 63º, 147º
6] X = 104º (OAT, ITT, SATT, SAT, CAT)



7] X = 45º (SAP & SAT or SEAT)

	Let Statements	Equation	Answer
8]	Let x be the 1st angle Let x + 2 be the 2nd angle Let x + 4 be the 3rd angle Let x + 6 be the 4th angle	x + x + 2 + x + 4 + x + 6 = 360 (QUAD)	1st angle: 87º 2nd angle: 89º 3rd angle: 91º 4th angle: 93º
9]	Let x – 10 be the 1st angle Let x be the 2nd angle Let $\frac{x-10}{2}$ be the 3rd angle	$x-10+x+\frac{x-10}{2}=360$ (SEAT)	1st angle: 140º 2nd angle: 150º 3rd angle: 70º