Midterm Review

- You get to refresh your mind and look at everything you have learned
- It's a chance to learn something that you did not quite understand or missed the 1st time

Topics:

Midpoint formula
Distance formula
Segment bisectors, Angle bisectors, collinear, coplanar
Supplementary, complementary, vertical angles, linear pairs,
Segment and angle addition
Solve problems with ratios
Solve Equations

Constructions of:
Perpendicular bisector, Midpoint, Angle bisector, Perpendicular, Congruent angles, Equilateral triangles

Parallel lines and transversals
Interior angle theorem for triangles
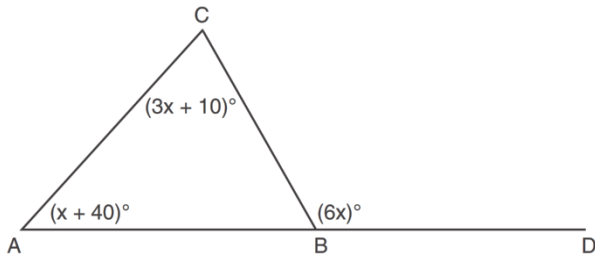Triangle angle sum

Transformations
Rotations, Reflections, Translations, Dilations
Composition of transformations
Basic Rigid Motions

1.	In the diagram of ΔABC below, $\overline{AB}$ is extended to point D.

If $m\angle CAB = x + 40$, $m\angle ACB = 3x + 10$, $m\angle CBD = 6x$, what is $m\angle CAB$?
1) 13
2) 25
3) 53
4) 65

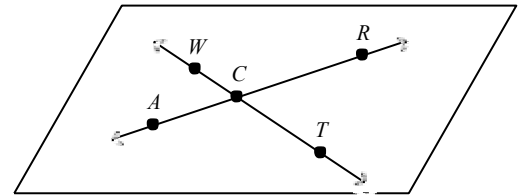| 2.	Look up formulas: a. What is the <u>midpoint of a line</u>? b. What is the distance formula?

3.	What is the sum, in degrees, of the measures of a triangle?

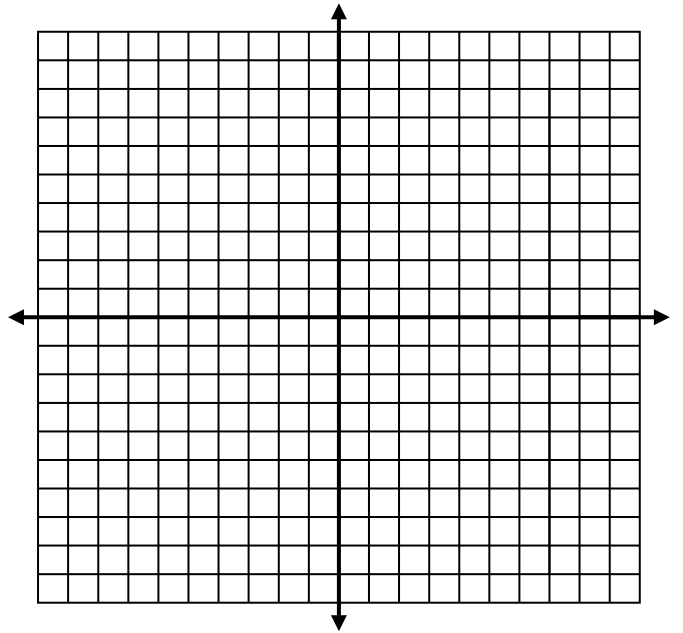| 4.	How do you find the outside angle of a triangle?

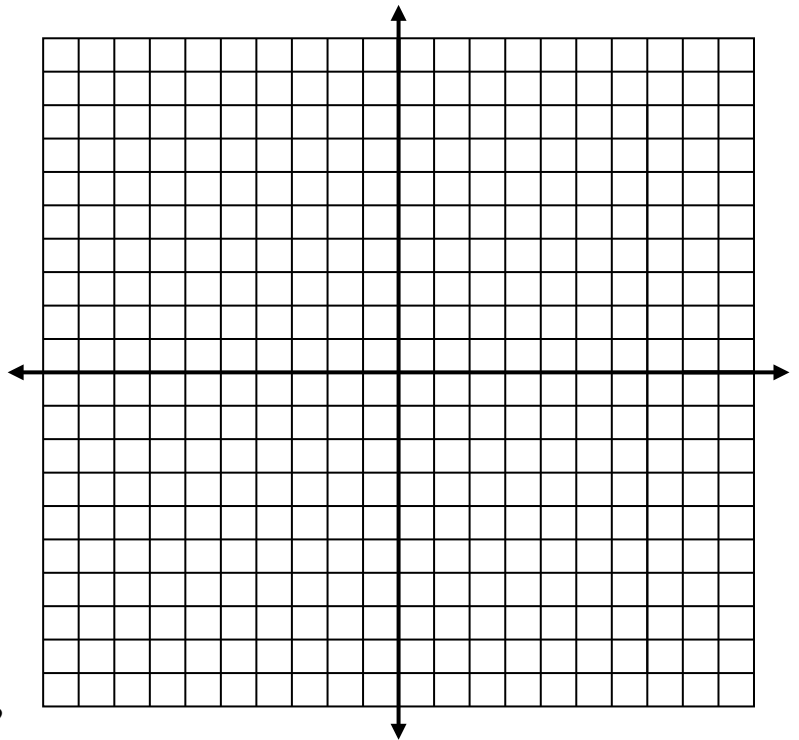| 5.	Name a plane that contains $\overleftrightarrow{AC}$. 1. plane ACR 3. plane WRT 2. plane WCT 4. plane RCA

| 6.	M is the midpoint of $\overline{CD}$. If the coorinated of C are (-3,6) and the coordinates of M are (1,1), what are the coordinates of D?

| 7.	a. Graph ΔDOG with vertices D(-6, 5), O(-2, 7) and G(-1, 1).
	b. Graph ΔD'O'G', the image of ΔDOG under the r_{y-axis}.
	c. Graph ΔD''O''G'', the image on ΔD'O'G' under the $T_{(-3,-4)}$.
	d. Graph ΔD'''O'''G''', the image of ΔD''O''G'' under the D_3.
	e. Which transformations are rigid motions?

| 8.	The endpoints of $\overline{AB}$ are A(3,-2) and B(-6,2), do the following compositions and state the new endpoints: a. $D_2 \circ T_{(-2,4)}$ b. $r_{y-axis} \circ R_{180}$

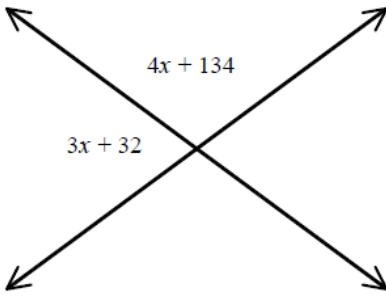| 9.	In $\triangle ABC$, D is the midpoint of $\overline{AB}$ and E is the midpoint of $\overline{BC}$. If $AC = 3x - 15$ and $DE = 6$, what is the value of x? B D E A C 1) 6 2) 7 3) 9 4) 12
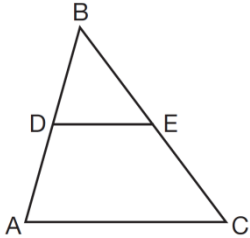
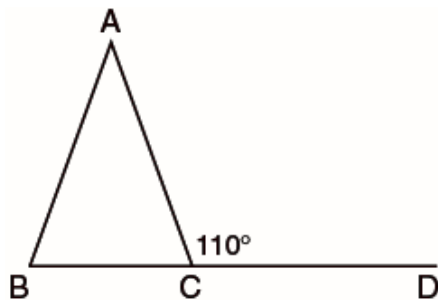| 10.	Using only a compass and straightedge construct the perpendicular bisector of the line segment that connects points A and B. A B
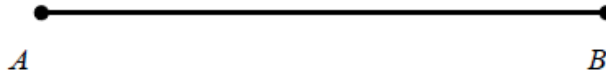
11.	Construct the angle bisector of the given angle.

12.	Solve for x:

$4x + 134$

$3x + 32$
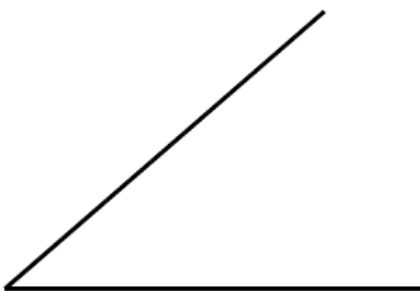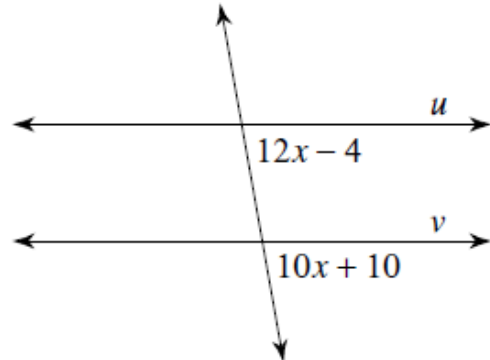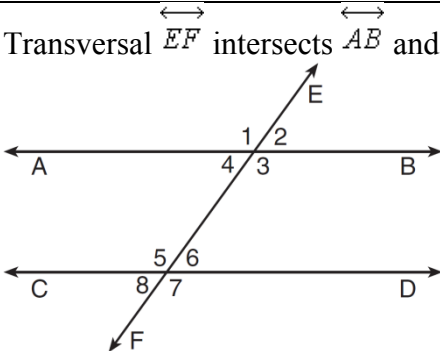
13.	In the accompanying diagram of isosceles triangle ABC, $\overline{AB} \cong \overline{AC}$, and exterior angle $ACD = 110°$. What is $m\angle BAC$?

A

110°

B   C   D

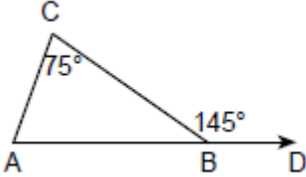| 14.	Find the value of x that makes lines u and v parallel.

u

$12x - 4$

v

$10x + 10$

15.	Transversal $\overleftrightarrow{EF}$ intersects $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$, as shown in the diagram below.

E

1 / 2
A   4 / 3   B

5 / 6
C   8 / 7   D

F

Which statement could always be used to prove $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$?
1) $\angle 2 \cong \angle 4$
2) $\angle 7 \cong \angle 8$
3) $\angle 3$ and $\angle 6$ are supplementary
4) $\angle 1$ and $\angle 5$ are supplementary

16.	In △ABC, m A = x°, m B = (x + 10) ° and C = (3x + 20) °. What is the number of degrees in ∠A?
17.	Two angles of a triangle are equal in measure and the third angle is 110°. Find the number of degrees in one of the two equal angles.
18.	In the accompanying diagram of △ABC, $\overline{AB}$ is extended to D, exterior angle CBD measures 145°, and m∠C = 75. What is m∠CAB? 1) 35 2) 70 3) 110 4) 220 C 75° 145° A B D
19.	$\overrightarrow{BD}$ bisects ∠ABC, m∠ABD = (7x − 1)°, and m∠DBC = (4x + 8)°. Find m∠ABD. 1. m∠ABD = 22° 3. m∠ABD = 40° 2. m∠ABD = 3° 4. m∠ABD = 20°
20.	An angle measures 2 degrees more than 3 times its complement. Find the measure of its complement. 1. 68° 3. 23° 2. 272° 4. 22°

21. $\overrightarrow{MO}$ bisects $\angle LMN$, $m\angle LMO = 6x - 22$, and $m\angle NMO = 2x + 34$. Solve for x and find $m\angle LMN$. The diagram is not to scale.