Geometry   Name: ______________________

Fall Final Exam Note Sheet

Linear Formulas:

For two points: (x_1, y_1) and (x_2, y_2)

Distance Formula: $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

Midpoint Formula: $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$

Slope Formula: $\frac{y_2 - y_1}{x_2 - x_1}$

Point-Slope: $y - y_1 = m(x - x_1)$

Slope Intercept: $y = mx + b$

Quadratic Formula:

$ax^2 + bx + c = 0 \qquad x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Logic:

Conditional: $p \to q$

Converse: $q \to p$

Inverse: $not\ p \to not\ q$

Contrapositive: $not\ q \to not\ p$

All Polygons:

Sum of <u>all</u> interior angles: $180°(n-2)$

Sum of <u>all</u> exterior angles: $360°$

Regular Polygons:

<u>One</u> interior angle: $\frac{180(n-2)}{n}$

<u>One</u> exterior angle: $\frac{360}{n}$

5	pentagon
6	hexagon
7	heptagon
8	octagon
9	nonagon

10	decagon
11	11-gon
12	dodecagon
$n > 12$	n-gon

Common Reasons in Proofs:

Reflexive property of congruence.
Symmetric property of congruence.
Transitive property of congruence.

Theorems:
Vertical angles are congruent.
All right angles are congruent.
The isosceles triangle theorem (If two sides of a triangle are congruent then the angles opposite them are congruent)
If two lines are parallel the corresponding angles are congruent.
If two lines are parallel the alternate interior angles are congruent.

Definitions:
Definition of midpoint
Definition of bisector
Definition of perpendicular
Definition of equilateral triangle
Definition of isosceles triangle

Triangles can be proven congruent with the following:
SSS SAS ASA AAS HL
If two triangles are congruent then all corresponding parts are congruent. (common abbreviation: CPCTC)