Geometry Cheat Sheets

Geometry Cheat Sheets provide you with a tool for teaching your students note-taking, problem-solving, and organizational skills in the context of geometry lessons. Some of the cheat sheets include basic definitions and formulas, while others provide computational practice using these tools.

You may want to make overhead transparencies of some of the cheat sheets to work through the application of the formulas with them.

Concepts

Concept	*Cheat Sheet*
Definitions I: Lines	1
Definitions II: Relationships of Lines	2
Definitions III: Angles	3
Congruence and Addition Properties of Segments	4
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Definitions V: Parts of a Circle	6
Circumference and Area of Circles	7
Formulas I: Plane Figures	8
Formulas II: Solid Figures - Volume	9
Formulas III: Solid Figures - Surface Area	10
Parallel Lines Cut by a Transversal	11
Perpendicular Lines	12
Midpoint Formula	13
Distance Formula	14
Slope of a Line	15
Graph a Line from a Point and the Slope	16
Slope of a Line – 2 points	17
Definitions VI: Classify Polygons	18
Definitions VII: Basic Quadrilaterals	19
Definitions VIII: Special Quadrilaterals	20

Concept	***Cheat Sheet***
Rectangles: Area and Perimeter	**21**
Definitions IX: Classify Triangles	**22**
Definitions X: Classify Right Triangles	**23**
The Pythagorean Theorem	**24**
Congruent Triangles	**25**
Triangles: Perimeter and Area	**26**
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Two Triangle Inequality	**29**
One Triangle Inequality	**30**
Definitions XI: Isosceles Triangles	**31**
Definitions XII: Secants and Tangents	**32**
Circles and Their Inscribed Angles	**33**
Lengths of Segments in a Circle	**34**
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Definitions XIII: Arcs and Chords	**36**
Surface Area: Rectangular Prisms I	**37**
Surface Area: Rectangular Prisms II	**38**
Surface Area: Triangular Prisms	**39**
Surface Area: Cylinders	**40**
Surface Area: Spheres	**41**
Volume: Cones	**42**
Volume: Cylinders	**43**
Volume: Rectangular Prisms	**44**
Volume: Spheres	**45**
Volume: Square Pyramids	**46**
Volume: Triangular Prisms	**47**
Special Right Triangles: Isosceles	**48**
Special Right Triangles: 30^o–60^o–90^o	**49**
Similar Triangles	**50**

Lesson Plans for Geometry Cheat Sheets - Definitions

Objectives:	1. The student will learn to draw diagrams of definitions. 2. The student will learn to write definitions describing drawings.
Preparation:	1. Choose the Cheat Sheet that will help you teach a lesson. 2. If you want students to make their own drawings, choose the Cheat Sheet without drawings. 3. Make copies for the students. 4. Make a transparency for use on the overhead if you wish. Choose either the one with drawings or without.
Procedure:	1. Discuss each definition with the students. 2. Have students draw the figure for each of the definitions. 3. Have the students keep the Cheat Sheet in their notebooks as a reference.

Definition Sheets

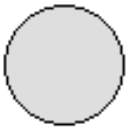
1 – Definitions of Lines	2 – Relationships of Lines
3 – Angles	5 – Relationships of Angles
6 – Parts of a Circle	18 - Classify Polygons
19 – Basic Quadrilaterals	20 – Special Quadrilaterals
22 – Classify Triangles	23 – Classify Right Triangles
31 – Isosceles Triangles	32 – Secants and Tangents
36 – Arcs and Chords	

Geometry Cheat Sheet 6

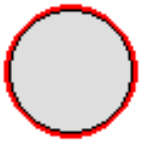
Definitions V: Parts of a Circle

- A **circle** is the set of all points in a plane that are a given distance from the center.
- The **circumference** of a circle is the length around it.
- An **arc** is part of a circle.
- A **diameter** is a line segment that is bounded by the circle and passes through the center.
- A **radius** is a line segment bounded by the center of the circle and a point on the circle.
- A **chord** is a line segment that is bounded by two points on the circle.

Definitions: Parts of a Circle -- Diagrams

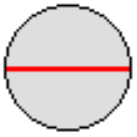


Circle

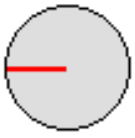


Circumference

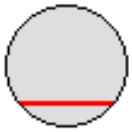
Arc



Diameter



Radius



Chord

Lesson Plans for Geometry Cheat Sheets - Formulas

Objectives:	1. The student will memorize the formulas for computing the area, perimeter, circumference, volume and surface area of common plane and solid figures. 2. The student will learn to organize his studies by the use of Cheat Sheets that separate the formulas into categories.	
Preparation:	1. Choose the Cheat Sheet that will help you teach a lesson. 2. Make copies for the students. 3. Make a transparency for the overhead.	
Procedure:	1. Review the formulas with the students. 2. Explain how the formulas work. 3. Have the students keep these sheets in their notebooks for reference.	
Formula Sheets	8 – Area, Perimeter and Circumference: Plane Figures	9 – Volume: Solid Figures
	10 – Surface Area – Solid Figures	

Geometry Cheat Sheet 8

Formulas I: Plane Figures

Area:

- Measured in square units
- The number of square units in a figure.

Perimeter:

- The distance around the outside of a figure.

Circumference:

- The distance around the outside of a circle

Formulas for Area, Perimeter, and Circumference

$A = \pi r^2$ Area of Circle	$C = 2\pi r$ Circumference	$A = s^2$ Area of Square
$P = 4s$ Perimeter of a Square	$A = lw$ Area of a Rectangle	$P=2l+2w$ Perimeter of a Rectangle

$A= \frac{ab}{2}$ Area of a Triangle	$P = s_1 + s_2 + s_3$ Perimeter of a triangle

Lesson Plans for Geometry Cheat Sheets - Drawings

Objectives:	1. The student will learn to draw diagrams Theorems and/or geometric concepts. 2. The student will learn to describe drawings or diagrams of geometric figures.	
Preparation:	1. Choose the Cheat Sheet that will help you teach a lesson. 2. If you want students to make their own drawings, choose the Cheat Sheet without drawings. 3. Make copies for the students. 4. Make a transparency for use on the overhead if you wish. Choose either the one with drawings or without.	
Procedure:	1. Discuss each drawing and its concepts with the students. 2. Have students draw the figure for each of the description. 3. Have the students keep the Cheat Sheet in their notebooks as a reference.	
Definition Sheets	3 – Congruence and Addition Properties of Segments	11 – Parallel Lines
	12 – Perpendicular Lines	25 – Congruent Triangles
	50 – Similar Triangles	

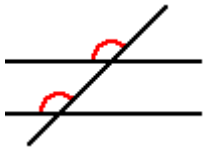
Geometry Cheat Sheet 11

Parallel Lines

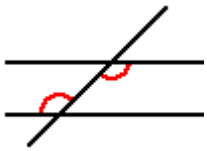
If two parallel lines are cut by a transversal:

- **corresponding angles** are congruent.
- **alternate interior angles** are congruent.
- **alternate exterior angles** are congruent.
- **interior angles on the same side** are supplementary.
- **exterior angles on the same side** are supplementary.

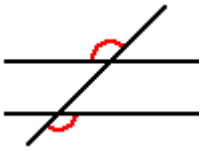
Parallel Lines cut by a Transversal -- Diagrams



Corresponding angles

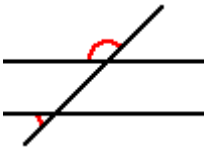


Alternate interior angles



Alternate exterior angles

Interior Angles on the same side



Exterior Angles on the same side

Lesson Plans for Geometry Cheat Sheets - Charts

Objectives:

1. The student will learn to substitute values into formulas.
2. The student will learn to use tables and procedures in the study of geometry.

Preparation:

1. Choose the Cheat Sheet that will help you teach a lesson.
2. If you want problems printed on the chart, make a copy to use as a master, and fill the numbers in the appropriate columns.
3. Make copies for the students.
4. Make a transparency for use on the overhead if you wish.

Procedure:

1. Point out the formula that is being used to solve the problems on the cheat sheet.
2. Work through one or two problems with the students on the overhead projector.
3. Have the students complete the rest of the problems on the Cheat Sheet.
4. Have the students keep the Cheat Sheet in their notebooks as a reference for solving that type of problems.

Chart Sheets

7 – Circumference and Area of Circles	13 – The Midpoint Formula
14 – The Distance Formula	15 – Slope of a Line
16 – Graph a Line: Point and Slope	17 – Slope of a Line – 2 points
18 – Classify Polygons	21 – Perimeter and Area of Rectangles
24 – Pythagorean Theorem	26 – Perimeter and Area of Triangles
27 – Sum of the Angles of a Triangle	28 – Exterior Angles of a Triangle
29 – Two Triangle Inequality	30 – One Triangle Inequality
33 – Circles and their Inscribed Angles	34 – Lengths of Segments in a Circle
35 – Arcs and Angles	37 – Surface Area – Rectangular Prism I
38 – Surface Area – Rectangular Prism II	39 – Surface Area – Triangular Prism
40 – Surface Area – Cylinder	41 – Surface Area – Sphere
42 – Volume – Cones	43 – Volume – Cylinders
44 – Volume – Rectangular Prisms	45 – Volume – Spheres
46 – Volume – Square Pyramids	47 – Volume – Triangular Prisms
48 – Special Right Triangles – Isosceles	49 – Special Right Triangles – 30-60-90

Geometry Cheat Sheet 21

Rectangles: Area and Perimeter

The formula for finding the **perimeter** of a rectangle is 2 times the sum of the length and the width:

$$P = 2(l+w)$$

The formula for finding the **area** of the rectangle is the length multiplied by the width:

$$A = lw$$

Rectangles: Area and Perimeter - Chart

Rectangle Number	Length	Width	Perimeter	Area
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

