

# Clifton High School Mathematics Summer Workbook

## Geometry Accelerated

The questions/problems in this booklet have been compiled by past and present CHS mathematics teachers based on open resources from publishers and math websites such as NCTM.

Completion of this summer work is required for the first day of the school year.

Date Received: _____	Date Completed: _____
Student Signature: _____	
Parent Signature: _____	

# Geometry Accelerated Summer Workpack



Welcome to Geometry Accelerated! Since this is the advanced level, you will be doing Chapter 1 of our book over the summer. It is an introductory chapter, but has a lot of information in it that we will use throughout the year. Enclosed in this packet you will find: A copy of Chapter 1 with book homework and worksheets. The worksheets are to be handed in on the FIRST DAY of school. **There will be a 5 point per day penalty for lateness.** The book homework will be gone over in class. After reviewing the chapter in class, the worksheets and the book homework, we will have a test on Chapter 1 which will count as 80% of the first test. The worksheets will count 20%.

## The book homework is:

Sect 1.1 – p. 33- 34 #'s 2 – 10, 18 – 31

Sect 1.2 - p. 42 – 45 #'s 1 – 15, 31 – 40, 42

Sect 1.3 – p. 51 – 53 #'s 1 –8, 11 – 13, 15 - 24

Sect 1.4 - p. 57 #'s 1 – 12, 15 - 17

Sect 1.5 - p. 62 #'s 1 – 4

Sect 1.6 – p. 66 #'s 1 – 10, 12

Sect 1.7 p. 72 #'s 1 – 9

My suggestion is NOT to wait until the last week before school starts. Do each worksheet as you do each section.

See you soon! Have a great summer!

-+



# The Worksheets

Name \_\_\_\_\_

Name \_\_\_\_\_ Date \_\_\_\_\_

Geom Acc. KCP ch 1 Vocab

The following 3 terms are undefined. Describe them using your book. (Glossary or Ch 1)

1) Point-

2) Line-

3) Plane –

Define the following using your book. (Glossary or Ch 1)

Section 1.1

4) Definition –

5) Collinear-

6) Coplanar-

7) Line segment –

8) Congruent ( $\cong$ ) –

9) Midpoint of a segment –

10) Ray –

Section 1.2

11) Angle (include the words **vertex** and **sides**)

12) Angle bisector-

Section 1.3

13) Counterexample –

Section 1.4

14) Polygon (include the words **side** and **vertex**)

15) Diagonal of a polygon

16) Convex vs. concave polygon –

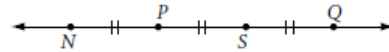
Section 1.7

17) Circle (include the words **radius** and **center**)-

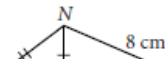
## Lesson 1.1 • Building Blocks of Geometry

Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

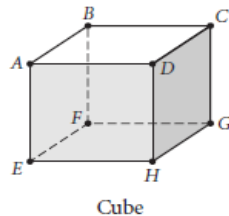
For Exercises 1–7, complete each statement.  $\overline{PS} = 3$  cm.



- The midpoint of  $\overline{PQ}$  is \_\_\_\_\_.
- $NQ =$  \_\_\_\_\_.
- Another name for  $\overline{NS}$  is \_\_\_\_\_.
- $S$  is the \_\_\_\_\_ of  $\overline{SQ}$ .
- $P$  is the midpoint of \_\_\_\_\_.
- $\overline{NS} \cong$  \_\_\_\_\_.
- Another name for  $\overline{SN}$  is \_\_\_\_\_.
- Name all pairs of congruent segments in  $KLMN$ . Use the congruence symbol to write your answer.



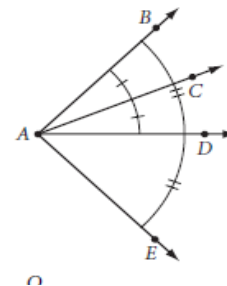
- Sketch six points  $A, B, C, D, E,$  and  $F$ , no three of which are collinear. Name the lines defined by these points. How many lines are there?
- In the figure below,  $\{B, C, H, E\}$  is a set of four coplanar points. Name two other sets of four coplanar points. How many sets of four coplanar points are there?



## Lesson 1.2 • Poolroom Math

For Exercises 1–5, use the figure at right to complete each statement.

- $A$  is the \_\_\_\_\_ of  $\angle BAE$ .
- $\overline{AD}$  is the \_\_\_\_\_ of  $\angle BAE$ .
- $\overline{AD}$  is a \_\_\_\_\_ of  $\angle DAE$ .
- If  $m\angle BAC = 42^\circ$ , then  $m\angle CAE =$  \_\_\_\_\_.
- $\angle DAB \cong$  \_\_\_\_\_.



For Exercises 13–15, find the measure of the angle formed by the hands at each time.

13. 3:00

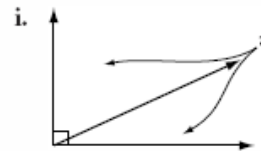
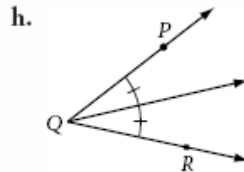
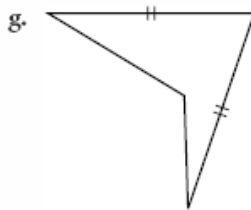
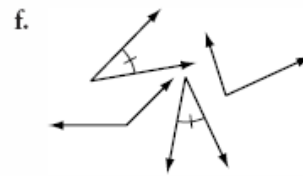
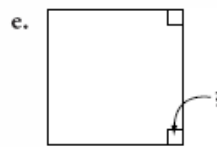
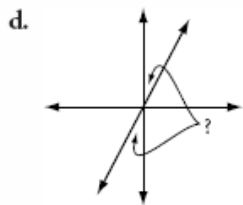
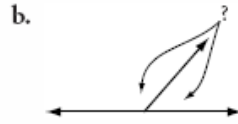
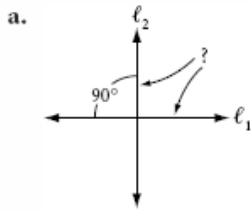
14. 4:00

15. 3:30

# Lesson 1.3 • What's a Widget?

Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

For Exercises 1–9, match each term with one of the items (a to i) below.



- |                             |                                |
|-----------------------------|--------------------------------|
| 1. _____ Vertical angles    | 2. _____ Obtuse angle          |
| 3. _____ Right angle        | 4. _____ Complementary angles  |
| 5. _____ Congruent angles   | 6. _____ Linear pair of angles |
| 7. _____ Bisected angle     | 8. _____ Perpendicular lines   |
| 9. _____ Congruent segments |                                |
10. If  $m\angle P = 13^\circ$ ,  $m\angle Q = 77^\circ$ , and  $\angle Q$  and  $\angle R$  are complementary, what can you conclude about  $\angle P$  and  $\angle R$ ? Explain your reasoning.

For Exercises 11–13, sketch, label, and mark a figure showing each property.

11.  $l_1 \parallel l_2, l_2 \perp l_3$

12.  $\overline{PQ} \perp \overline{PR}$

13.  $\angle BAC \cong \angle XAY, CX = BC$

## Lesson 1.4 • Polygons

Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

For Exercises 9 and 10, sketch and label each figure. Mark the congruences.

9. Concave pentagon  $PENTA$ , with external diagonal  $\overline{ET}$ , and  $\overline{TA} \cong \overline{PE}$ .

10. Equilateral quadrilateral  $QUAD$ , with  $\angle Q \neq \angle U$ .

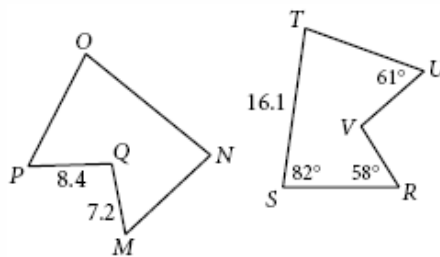
For Exercises 11–14, sketch and use hexagon  $ABCDEF$ .

11. Name the diagonals from  $A$ .
12. Name a pair of consecutive sides.
13. Name a pair of consecutive angles.
14. Name a pair of non-intersecting diagonals.

For Exercises 15–18, use the figures at right.

$MNOPQ \cong RSTUV$

15.  $m\angle N =$  \_\_\_\_\_
16.  $VR =$  \_\_\_\_\_
17.  $m\angle P =$  \_\_\_\_\_
18.  $ON =$  \_\_\_\_\_

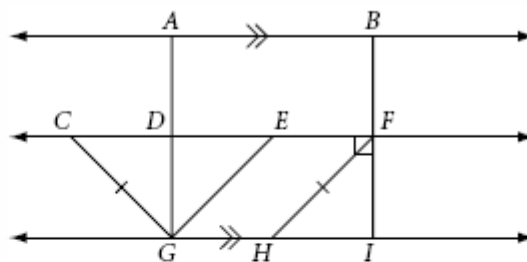


19. The perimeter of a regular pentagon is 31 cm. Find the length of each side.

## Lesson 1.5 • Triangles

For Exercises 1–5, use the figure at right. Name a pair of

1. Parallel segments
2. Perpendicular segments
3. Congruent segments
4. Supplementary angles
5. Linear angles



For Exercises 6 and 7, sketch, label, and mark each figure.

6. Isosceles obtuse triangle  $TRI$  with vertex angle  $T$ .
7. Scalene right triangle  $SCA$  with midpoints  $L$ ,  $M$ , and  $N$  on  $\overline{SC}$ ,  $\overline{CA}$ , and  $\overline{SA}$ , respectively.

## Lesson 1.6 • Special Quadrilaterals

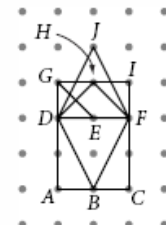
Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

For Exercises 1–6, sketch, label, and mark each figure.

1. Parallelogram  $PGRA$
2. Square  $SQRE$
3. Rhombus  $RHOM$  with acute  $\angle H$ .
4. Trapezoid  $TRAP$  with  $\overline{TR} \parallel \overline{AP}$ ,  $\overline{RE} \perp \overline{PA}$ , and  $P$ ,  $E$ , and  $A$  collinear.
5. Kite  $KITE$  with  $EK = KI$  and obtuse  $\angle K$ .
6. Rectangle  $RANG$  with perimeter  $2a + 4b$

For Exercises 7–10, name each polygon in the figure. Assume that the grid is square.

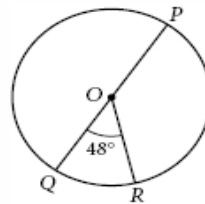
7. Square
8. Parallelogram
9. Rhombus
10. Kite



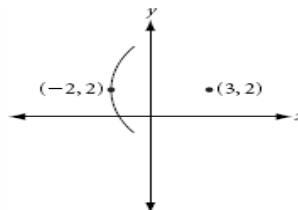
## Lesson 1.7 • Circles

For Exercises 1–4, use the figure at right.

1.  $m\widehat{QR} = \underline{\hspace{2cm}}$
2.  $m\widehat{PR} = \underline{\hspace{2cm}}$
3.  $m\widehat{PQR} = \underline{\hspace{2cm}}$
4.  $m\widehat{QPR} = \underline{\hspace{2cm}}$



5. Sketch a circle with an inscribed pentagon.
6. Sketch a circle with a circumscribed quadrilateral.
7. A circle with center  $(3, 2)$  goes through  $(-2, 2)$ . Give the coordinates of three other points on the circle.





Name \_\_\_\_\_ date \_\_\_\_\_ geom acc sect 1.7  
Vocab circles

Define the following using either the glossary of your book or section 1.7 of your book.

1. Circle –
2. Radius –
3. Chord –
4. Diameter –
5. Tangent –
6. Point of tangency –
7. Congruent circles –
8. Concentric circles –
9. Arc (include endpoints of an arc) -
10. Semicircle-
11. Minor arc –
12. Major Arc-
13. Arc measure-
14. Central angle -



# Chapter 1

Key Curriculum Press – Discovering Geometry