Formal Geometry Assignments 2024-25
Chapter 1: TOOLS OF GEOMETRY

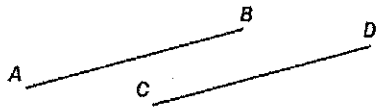
Day	Date	Assignment (Due the next class meeting)
Monday Tuesday	8/12/24 (A) 8/13/24 (B)	• Syllabus signature • Pay $3 Lab Fee • Algebra Review Worksheet (Due 8/26 or 8/27) **Vocabulary Study Guide in Class** 1.1 textbook p 9-12 #32 – 38 even, 44, 46, 53, 58, 67 **1.1 Extra Problems #1-7** (see the next page in this packet; do you work on your own paper, and make sure to include the full set-up for each proof.)
Wednesday Thursday	8/14/24 (A) 8/15/24 (B)	1.2 textbook p 20-24 #11-15 odd, 19-25 odd, 34-40 even, 44, 46, 55, 57, 58 1.3 textbook p 32-33 #20, 22, 30, 32, 34, 36, 50 • ***Pay $3 lab fee to bookkeeper; bring receipt to class***
Friday Monday	8/16/24 (A) 8/19/24 (B)	1.4 textbook p 41-43 #9-10, 37 – 41 odd, 51, 52 **1.4 Extra Problems #1-6** (see the next page in this packet; do you work on your own paper, and make sure to include the full set-up for each proof.) • **Study for Vocab Quiz** • ***Syllabus Signature*** • ***Pay $3 lab fee to bookkeeper; bring receipt to class***
Tuesday Wednesday	8/20/24 (A) 8/21/24 (B)	1.5 textbook p 51-54 #12, 15, 17, 21 – 29 odd, 31, 35, 49 [56-58 bonus] **1.5 Extra Problems #1-8** (see the next page in this packet; do you work on your own paper, and make sure to include the full set-up for each proof.) • **Study for Vocab Quiz**
Thursday Friday	8/22/24 (A) 8/23/24 (B)	Chapter 1 Review Worksheet **Vocab Quiz In Class!**
Monday Tuesday	8/26/24 (A) 8/27/24 (B)	• **Study for Chapter 1 Test!!!** • *In Class: 2.1 Notes* • Algebra Review Wk Due!
Wednesday Thursday	8/28/24 (A) 8/29/24 (B)	**Chapter 1 Test** • 2.1 HW

- **Each problem will be worth 1 point unless specified.**
- **Extra Problems start on the next page in this packet. Do ALL work on your own paper.**
- **EVERY problem must be attempted to receive on-time credit.**
  - Every problem must be attempted with the picture drawn and work shown.
  - For proofs, you MUST write out the Given, Prove, and Diagram, and attempt at least two steps.
  - Students are expected to have their HW graded prior to the next class.
- **Corrections are expected to be done to earn back points missed for each assignment.**
- **Students who complete EVERY assignment this semester will earn a 2% bonus.**
- **Students with no late HW or missing assignments this semester will earn a free pizza party.**
- ***You can find video notes for all sections on the YouTube channel (link can be found in canvas)***

1. 1 Extra Problems

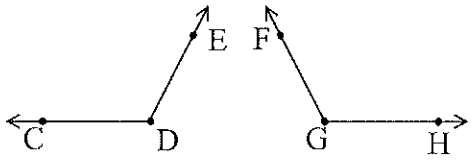
1) Given: $AB = CD$

Prove: $\overline{AB} \cong \overline{CD}$



2) Given: $\angle D \cong \angle G$

Prove: $m\angle D = m\angle G$



3) Factor: $x^2 - 18x + 80$

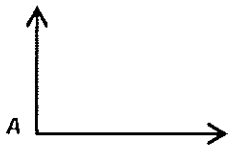
4) Factor: $8x^2 - 10x - 3$

5) Multiply: $(9x + 2)^2$

6) Simplify: $\left(2\sqrt{7}\right)^2$

7) Given: $m\angle A = 90°$

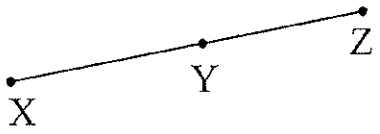
Prove: $\angle A$ is a right angle



1.4 Extra Problems

1) Given: $XY = YZ$

Prove: Y is the midpoint of $\overline{XZ}$.

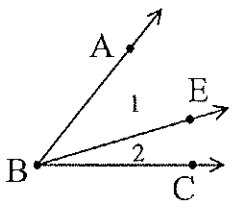


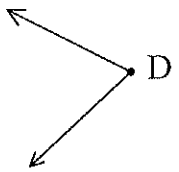
2) Given: $m\angle A = 76°$, $m\angle A = m\angle B$

Prove: $m\angle B = 76°$

3) **This is NOT a proof!**

Given: $\angle 1 = (x + 7)°$
$\angle 2 = (2x - 3)°$
$\angle ABC = (x^2)°$
$\angle D = (5x - 4)°$





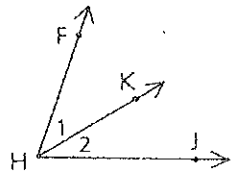
Is $\angle ABC \cong \angle D$. Explain your reasoning.

More 1.4 Extra Problems on the next page!

4) This is a proof!

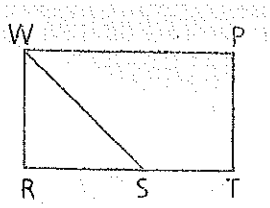
Given: $\angle 1 \cong \angle 2$

Conclusion: $\overrightarrow{HK}$ bisects $\angle FHJ$.



5) Given: $\overrightarrow{WS}$ bisects $\angle RWP$.

Prove: $\angle RWS \cong \angle PWS$



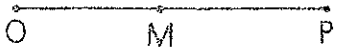
6) The point $(5, -3)$ is a midpoint of which of the following?
Choose all that apply

A) $(-2, 5)$ *and* $(8, -1)$
B) $(0, -3)$ *and* $(10, -3)$
C) $(0, 10)$ *and* $(10, -16)$
D) $(1, 1)$ *and* $(9, 5)$
E) $(-5, 3)$ *and* $(0, 0)$
F) $(\frac{23}{4}, -10)$ *and* $(\frac{17}{4}, 4)$

1.5 Extra Problems

1) Given: $OM = x + 8$,
$MP = 2x - 6$,
$OP = 44$

Is M the midpoint of $\overline{OP}$?

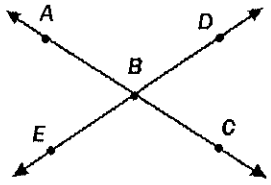


2) The supplement of an angle is four times the complement of the angle. Find the measure of the complement.

3) Five times the complement of an angle less twice the angle's supplement is 30°. Find the measure of the supplement.

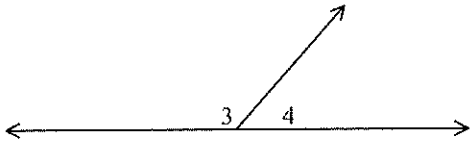
4) Given: Diagram

Prove: $\angle ABD \cong \angle EBC$



5) Given: Diagram

Prove: $\angle 3$ is supplementary to $\angle 4$.



More 1.5 Extra Problems on the next page!

1.5 Extra Problems continued

6) Given: $m\angle 1 + m\angle 2 = 180$
Prove: $\angle 1$ and $\angle 2$ are supplementary.

7) Which of the following statements are NOT always true? Choose all that apply.
A) If two angles are vertical, then they are congruent.
B) If two angles are congruent, then they are vertical.
C) If two angles are supplementary, then they form a linear pair.
D) If two angles have the same measure, then they are congruent.

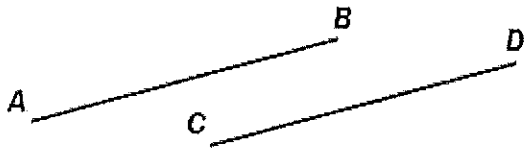
8) Points A, B, C, and D are on a line such that B is between A and C, and C is between B and D. The distance from A to B is 6 units. The distance from B to C is twice the distance from A to B ,and the distance from C to D is twice the distance from B to C. What is the distance, in units, from the midpoint of $\overline{BC}$ to the midpoint of $\overline{CD}$?

A) 18
B) 14
C) 12
D) 9
E) 6

Selected answers for Extra Problems:

Section 1.1:

1) Given: $AB = CD$
Prove: $\overline{AB} \cong \overline{CD}$



Statements	Reasons
1) $AB = CD$	1) Given
2) $\overline{AB} \cong \overline{CD}$	2) If two segments have the same length, then they are $\cong$.

3) $(x-8)(x-10)$ 4) $(4x+1)(2x-3)$ 5) $81x^2+36x+4$ 6) 28

Selected answers for Extra Problems:

Section 1.4:

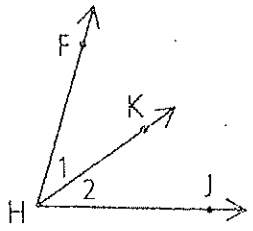
2) Given: $m\angle A = 76°$, $m\angle A = m\angle B$

Prove: $m\angle B = 76°$

Statements	Reasons
1) $m\angle A = 76°$, $m\angle A = m\angle B$	1) Given
2) $m\angle B = 76°$	2) Substitution (1 into 1)

4) Given: $\angle 1 \cong \angle 2$

Conclusion: $\overrightarrow{HK}$ bisects $\angle FHJ$.

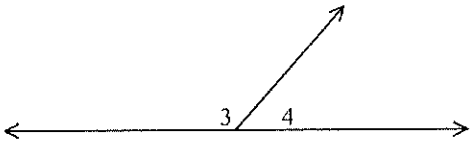


Statements	Reasons
1) $\angle 1 \cong \angle 2$	1) Given
2) $\overrightarrow{HK}$ bisects $\angle FHJ$.	2) If a ray divides an $\angle$ into 2 $\cong \angle$s, then it bisects the $\angle$.

Section 1.5:

1) Yes 2) 30° 3) 160°

5) Given: $\angle 3$ and $\angle 4$ form a linear pair.
Prove: $\angle 3$ is supplementary to $\angle 4$.



Statements	Reasons
1) Diagram	1) Given
2) $\angle 3$ and $\angle 4$ form a linear pair.	2) Diagram
3) $\angle 3$ is supplementary to $\angle 4$.	3) If two angles form a linear pair, then they are

Formal Geometry | Algebra Review Wk

Name_____

1) Solve: $5 - 3(2x - 1) = 6 - 2x$

2) Solve: $2x + 5(x - 7) \geq 3x + 4$

3) Factor: $x^2 + 5x - 24$

4) Factor: $a^2 - 7a + 10$

5) Factor: $5x^2 - 6x + 1$

6) Factor: $6x^2 + 7x - 3$

7) Factor: $4x^2 - 6x - 40$

8) Multiply: $(x - 4)^2$

9) Multiply: $(7x + 2)^2$

10) Solve by factoring: $2x^2 + 3x - 35 = 0$

11) Solve by factoring: $x^2 - 28 = -3x$

12) Solve: $5x^2 - 2x - 1 = 0$
(what if it doesn't factor; how can we solve a quadratic?)

13) Solve for x in terms of y:

$3y + 2x = -4$

14) Solve for (x, y): $\begin{cases} 3x - 5y = 8 \\ -3x + 2y = 1 \end{cases}$

15) Solve for (x, y): $\begin{cases} x + 2y = 3 \\ 2x + 3y = 3 \end{cases}$

16) Solve for (x, y): $\begin{cases} 2x - 3(y + 1) = 8 \\ 3(x + 2) + 5y = -6 \end{cases}$

For #17 – 20 simplify each expression completely.

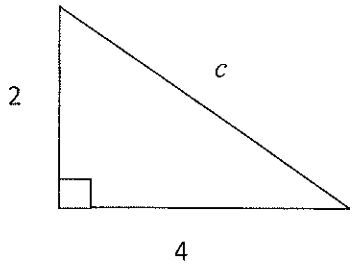
17) $\sqrt{24x^3y^8}$

18) $\left(5\sqrt{2}\right)^2$

19) $\left(-2\sqrt{12}\right)\left(5\sqrt{3}\right)$

20) $\frac{\sqrt{18}}{\sqrt{15}}$

21) Use the Pythagorean Theorem ($a^2 + b^2 = c^2$) to solve for the missing hypotenuse in the right triangle shown.



Only check the answers when needed. Working backwards should be used on a limited basis.
Bring this assignment scored in pen (not blue or black) out of 21 points possible.

Answers: 1) $x = \frac{1}{2}$ 2) $x \geq \frac{39}{4}$ 3) $(x + 8)(x - 3)$ 4) $(a - 5)(a - 2)$ 5) $(x - 1)(5x - 1)$

6) $(2x + 3)(3x - 1)$ 7) $2(2x + 5)(x - 4)$ 8) $x^2 - 8x + 16$ 9) $49x^2 + 28x + 4$

10) $-5; \frac{7}{2}$ 11) 4, -7 12) $x = \frac{1 \pm \sqrt{6}}{5}$ 13) $x = -\frac{3y}{2} - 2$ $\left(or\ \frac{-3y-4}{2}\right)$ 14) $\left(-\frac{7}{3}, -3\right)$

15) (-3, 3) 16) (1, -3) 17) $2xy^4\sqrt{6x}$ 18) 50 19) -60 20) $\frac{\sqrt{30}}{5}$ 21) $2\sqrt{5}$