

Geometry week 8

Day 1: pp. 152-153 #1-9 odd, 11-19

Day 2: pp. 156-157 #1-30

Day 3: Chapter 4 test

Day 4: pp. 163-166 #1-2, 8-13, (#14 ec), worksheet

Day 5: pp. 167-168 #1-30

Notes on Assignment:

Pages 152-153

Work to show:

All problems: **Constructions**

Note: You may want to photocopy page 152 so that you can make marks on the figures that you are copying. Otherwise, draw very lightly in your book so that you can erase it.

- #1: Draw a ray on your paper and label the endpoint Q' . Then open your compass, put the point at Q of $\angle PQR$, and draw an arc that intersects both rays of $\angle PQR$. Put your point at the end of your ray at point Q' and draw an arc there, too. Measure the opening of $\angle PQR$ where the arc intersects each ray with your compass. Without changing your compass, place the point of your compass where the arc you drew intersects your ray. Draw an arc. Where the arc intersects the other arc is the point through which you should draw the other ray of your angle.
- #3: Do this the same way you did #1.
- #5: You will have to copy $\angle PQR$ and then bisect it. Place the point of your compass at point Q . Draw an arc that intersects both sides of the angle. Put the point of your compass at each of the places where the arc intersects each ray and draw a small arc in the interior of the angle. Where these 2 arcs intersect is the point through which you should draw the bisecting ray.
- #7: Copy $\angle PQR$ following the process above. Then turn your paper and use ray QP as your ray and copy $\angle STU$. The 2 angles should share ray QP as a common side.
- #9: You will have to copy $\angle STU$ and then bisect the angle twice.
- #11: Construct the angle congruent to $\angle XYZ$. (This means to copy the angle.) Using ray YZ , turn your paper and copy $\angle PQR$ into the interior. (Note: Your originating ray YZ points to the left, but that's ok. Mark your arcs the same way

as you would if it pointed to the right. After you construct $\angle PQR$ in the interior of $\angle XYZ$, what is left of your angle $\angle XYZ$ is your answer.

- #12: Copy $\angle PQR$. Then copy the angle again, using ray QP . Then copy the angle again in the same manner so that your angle is the angle copied 3 times.
- #13: Copy $\angle XYZ$. Turn your paper and use ray XY and copy $\angle PQR$. Turn your paper back to normal position. You need to copy $\angle STU$ into the interior of your angle to subtract it. You can use either of the rays of your sum angle to construct $\angle STU$. Whatever part of the sum angle is left after copying $\angle STU$ in the interior is your answer.
- #14: Copy $\angle PQR$. Then add $\angle XYZ$ to that by copying it using ray PQ as one of the sides. Since we only want to add $\frac{1}{2}$ of $\angle XYZ$, we need to bisect $\angle XYZ$. Your answer is the angle PQR plus the adjacent half of the angle XYZ .
- #15: Construct the angle with measure equal to $m\angle STU - m\angle PQR$ first by copying angle PQR into the interior of $\angle STU$. What is left of $\angle STU$ is what needs to be bisected.
- #16: Copy $\angle PQR$ first. Using the vertex Q , mark off segments on each ray that are the lengths of AB and CD using your compass. Connect the endpoints of the segments to complete the triangle.
- #17: Copy $\angle STU$ first. Using the vertex T , mark off segments on each ray that are the lengths of AB and EF using your compass. Connect the endpoints of the segments to complete the triangle.
- #18: As in #16 and #17, get your angle established first, and then mark off the lengths of the sides. Connect the endpoints of the segments to complete the triangle.
- #19: Since you need your angle to measure $\frac{1}{2}$ of $\angle PQR$, you will need to copy the angle and then bisect it. Using the vertex P , mark off the lengths of the sides AB and CD along the bisecting ray and one of the other rays of $\angle PQR$. Connect the endpoints of the segments to complete the triangle.

Pages 156-157

Work to show:

All problems: Show work as needed.

#20-23: Constructions

Chapter Review – no notes.

Chapter 4 Test

Know the following for the test:

- Identify triangles and quadrilaterals with specific names.
- Answer questions about the above figures using the vocabulary of the chapter.
- Measure angles with a protractor.
- Copy a given angle (by construction)
- Bisect an angle (by construction)
- Find measurements of angles in a figure of intersecting lines and segments.
- Know the Angle Addition Postulate (mistakenly called the Angle Addition Theorem) and be able to demonstrate it with a picture.
- Answer fill-in-the-blank questions using the vocabulary of the chapter.
- Solve and graph inequalities and compound inequalities.
 - “or” means “union”
 - “and” means “intersection” (overlap)
- Solve an absolute value inequality. (Draw it first to aid in answering)

Pages 163-166

Work to show:

#1-2: Answers only

#8-10: Draw Venn diagrams

#11: Use handout.

#12-13: Show any work needed

#8: If you have some people in both groups, then your circles must overlap. Draw them and then fill in your amounts.

#9: Make the box represent your universal set of 77 students. You 2 circles would be those who are since and those who are women.

#10: All of the mothers fit into one of 3 groups, so you will draw 3 circles, but there will be no one outside of the 3 circles in the universal set.

#11: Use the empty grid handed out in class. Go through each clue and mark down the obvious ones. Then go through again.

#12: This is not a chart problem. It is more by trial and error. Try some different guesses. Here's an obvious hint. Mike will have to cross alone. Assume all 3 boys can row.

#13: It may help to write down all of the possible answers (there are 8 of them). Then use trial and error to see which one works.

#14: This one is for extra credit. It's tough!

Pages 167-168

Work to show:

All problems: Answers only is ok.

#13-20: You will see the words "some" and "no" in the solutions. You can translate directly using "There exists" and "every" where appropriate. Remember that when negating something with a universal or existential quantifier, that "some are" and "none are" are negations of each other, while "all are" and "some are not" are negations of each other.

#25: In general, you can always negate the sentence and change the quantifier.

#26-30: Most of these come from section 4.5, but one comes from section 2.7.