

Geometry Homework Worksheets: Chapter 2

HW #6: Problems #1 – 11

Show all of your work!

For #1-3, choose the best answer for each multiple choice question.

1. Which of the following statements is/are always true?
 - I. adjacent angles are acute
 - II. if $m\angle 2 = 70^\circ$, then $\angle 2$ is acute
 - III. two acute angles make a right angle
 - A. I only
 - B. II only
 - C. III only
 - D. both I and II
 - E. I, II, and III
2. Identify the converse of the conditional statement below:

If I break my iPod, I will get in trouble.

 - A. If I don't break my iPod, I won't get in trouble.
 - B. If I break my iPod, I will get in trouble.
 - C. If I get in trouble, I will break my iPod.
 - D. If I don't get in trouble, I didn't break my iPod.
 - E. none of the above
3. Identify a counterexample to the given statement:

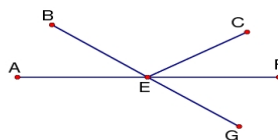
If $\angle A$ is obtuse, then $m\angle A = 120^\circ$

 - A. $\angle A$ is an acute angle
 - B. $\angle A$ is a right angle
 - C. $m\angle A = 120^\circ$
 - D. $m\angle A = 80^\circ$
 - E. $m\angle A = 110^\circ$

For questions 4-7 translate each of the following into a mathematical expression.

4. The difference of four times a number and seven.
5. Three times the difference of a number and two.
6. The sum of two and the quotient of a number and five.
7. The product of four times a number and nine.

For questions 8-11, justify each statement with a definition, postulate, or theorem. Refer to the figure on the right.



8. If E is the midpoint of \overline{AF} , $\overline{AE} \cong \overline{EF}$.
9. $AE + EF = AF$
10. If \overline{BG} bisects \overline{AF} , then E is the midpoint of \overline{AF} .
11. $m\angle AEC + m\angle CEF = 180^\circ$.