**2.6 Applications & Quiz Review Geometry**

**Directions: Match the vocabulary term to the definition or symbolic form.**

\_\_\_\_\_ 1) Line a) Two angles whose sum is 90ᴼ

\_\_\_\_\_ 2) Line Segment b) $\overleftrightarrow{XY}$

\_\_\_\_\_ 3) Ray c) $m∠A+m∠B=180$ᴼ

\_\_\_\_\_ 4) Straight Angle d) Two angles whose measures is the same

\_\_\_\_\_ 5) Supplementary Angles e) An angle whose measure is 180ᴼ

\_\_\_\_\_ 6) Linear Pair f) $\vec{MN}$

\_\_\_\_\_ 7) Complementary Angles g) Part of a ray or line with two endpoints

\_\_\_\_\_ 8) Congruent Angles h) Two angles whose nonadjacent sides form

opposite rays

**Directions: Use the picture below to determine if you are allowed to assume each statement. Write a YES or a NO as your answer.**

 \_\_\_\_\_\_ 9) Points D, E, & F are collinear



 \_\_\_\_\_\_ 10) $∠DEC ≅ ∠GEF$

 \_\_\_\_\_\_ 11) ∆GEF is a right triangle

 \_\_\_\_\_\_ 12) $E$ is between C and G

**Directions: In the figure, a**$∥$**b. Answer each question.**

13) If m$∠$1 = (2x + 25)$ᴼ$ & m$∠5$ = (3x – 37)$ᴼ$, what is m$∠3$?

14) If m$∠6$ = (6x2)$ ᴼ$ and m$∠4$ = (14x2)$ᴼ$, what is m$∠4?$

15) If m$∠4$ = (–x + 60)ᴼ & m$∠5$ = (x2 + x – 20)ᴼ, what is m$∠6$?

16) What is the angle relationship between $∠$1 & $∠$2? 17) What is the angle relationship between $∠$7 & $∠$2?

18) What is the angle relationship between $∠$5 & $∠$8? 19) What is the angle relationship between $∠$3 & $∠$5?

**Directions: Use the conditional statement “If two segments intersect at a** $90°$ **angle, then the segments are perpendicular.” to find the converse, inverse, and contrapositive. Then find the truth value of each statement and write a biconditional statement if appropriate.**

20) T F Converse:

21) T F Inverse:

22) T F Contrapositive:

23) Biconditional:

24) What does the triangle sum theorem state?

25) What does the alternate interior angles theorem state?

26) What does the consecutive (same-side) exterior angles theorem state?

Draw a diagram the illustrates the following statements. Be sure to include the appropriate mathematical symbols and markings (i.e. right angles have a box symbol the corner).

|  |  |  |  |
| --- | --- | --- | --- |
| 27) $\overleftrightarrow{AC} bisects \overbar{GH}$What statement can you make about your diagram using the definition of segment bisector? | 28) $ ∠ABC and ∠CBX $$$form a linear pair$$What statement can you make about your diagram using the definition of linear pair? | 29) $ A is the $$$midpoint of \overbar{MN}$$What statement can you make about your diagram using the definition of midpoint? | 30) $ n∥m and are cut$$$ by a transversal$$**\*label the angles you just created with numbers 1-8**What statement can you make about your diagram using corresponding angles theorem? |