2.1-2.3 Quiz Review

LESSON 2.1
In 1-4, Sketch the next figure in the pattern.

2.)

3.)

4.)

5.)

<table>
<thead>
<tr>
<th>Pair of odd numbers</th>
<th>1,3</th>
<th>3,5</th>
<th>5,7</th>
<th>7,9</th>
<th>9,11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sum of the numbers</td>
<td>1+3</td>
<td>3+5</td>
<td>5+7</td>
<td>7+9</td>
<td>11+9</td>
</tr>
<tr>
<td>divided by 2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Average of numbers</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
</tbody>
</table>

Conjecture: The average of any two consecutive odd whole numbers is _EVEN_.

LESSON 2.2
In 6-9, Rewrite the conditional statement in if-then form.

6.) A pickup truck is a vehicle with a high utility value.
   If you have a pickup truck, then it is a vehicle with a high utility value.

7.) Homecoming is Saturday.
   If it is Saturday, then it is homecoming.

8.) Two lines that intersect form two pairs of vertical angles.
   If two lines intersect, then they form two pairs of vertical angles.

9.) The measure of a right angle is 90°.
   If the measure of an angle is 90°, then it's a right angle.
In 10-14, Decide whether the statement is true or false and EXPLAIN.

10.) If the sum of two numbers is positive, then the two numbers must be positive.

\[-2 + 3 = 1 \quad \text{False}\]

11.) If the quotient of two numbers is positive, then the two numbers must both be positive.

\[-\frac{2}{4} = \frac{1}{2} \quad \text{False}\]

12.) If the sum of the measures of two angles is 90°, then the angles are complementary.

\[\text{True} \quad \text{any 2 angles measures added together that equal 90° are complementary}\]

13.) If the measure of an angle is 34°, then it is an acute angle.

\[\text{True} \quad \text{an angle less than 90° is acute}\]

In 14, since both the original and converse are true, write it as a biconditional statement.

14.) If two angles are supplementary, then their sum is 180°.

\[\text{Two angles are supplementary if and only if their sum is 180°}\]

In 15 and 16, Rewrite the biconditional statement as a conditional statement and its converse.

15.) Points are coplanar if and only if they lie in the same plane.

\[\text{Conditional: If points are coplanar, then they lie in the same plane.}\]
\[\text{Converse: If two points lie in the same plane, then they are coplanar.}\]

16.) Two angles are a linear pair if and only if they are adjacent supplementary angles.

\[\text{If two angles form a linear pair, then they are adjacent supplementary angles.}\]
\[\text{Con: If two angles are adjacent supplementary angles, then they form a linear pair.}\]

In 17-19, Decide whether the statement is a valid definition. If not, EXPLAIN.

17.) If two angles have the same measure, then they are congruent.

\[\text{True}\]

18.) If two rays are opposite rays, then they have a common endpoint.

\[\text{True}\]
19.) If an acute angle is a right angle, then its measure is greater than that of an acute angle.

False- An acute angle is not a right angle.

**LESSON 2.3**
In 20-23, Determine if a conclusion can be drawn based on the given information and using either the Law of Detachment or the Law of Syllogism. If not, write invalid.

20.) If an angle measures more than 90°, then it is not acute. \( m\angle ABC = 120° \)

\[ \text{m} \angle ABC \text{ is not acute} \]

21.) All 45° angles are congruent. \( \angle A \equiv \angle B \)

\[ \text{Cannot conclude} - \text{we don't know measures of } \angle A \text{ or } \angle B \]

22.) If you wear the school colors, then you have school spirit.
If you have school spirit, then the team feels great.

\[ \text{If you wear the school colors, then the team feels great.} \]

23.) If \( \angle 2 \) is acute, then \( \angle 3 \) is obtuse. If \( \angle 3 \) is obtuse, then \( \angle 4 \) is acute.

\[ \text{If } \angle 2 \text{ is acute, then } \angle 4 \text{ is acute.} \]

In 24 - 26, Decide whether *inductive* or *deductive* reasoning is used to reach the conclusion. *Explain your reasoning.*

24.) For the past three Wednesdays, the cafeteria has served macaroni and cheese for lunch. Dana concludes that the cafeteria will serve macaroni and cheese for lunch this Wednesday.

Inductive - based on observations - Dana does not know for a fact.

25.) If you live in Nevada and are between the ages of 16 and 18, then you must take driver’s education to get your license. Anthony lives in Nevada, is 16 years old, and has his driver’s license. Therefore, Anthony took driver’s education.

Deductive - Based on Facts

26.) While shopping for a product, you notice that brand A is more expensive than brand B. You conclude that brand A is of higher quality than brand B.

Inductive - assuming b/c it's more expensive
In 27-30, Use the true statements below to determine whether you know the conclusion is true or false.

**Explain your reasoning.**
If Dan goes shopping, then he will buy a pretzel.
If the mall is open, then Jodi and Dan will go shopping.
If Jodi goes shopping, then she will buy a pizza.
The mall is open.

27.) Dan bought a pizza.

**False** - it says he will be a pretzel

28.) Jodi and Dan went shopping.

**Yes** - mall is open

29.) Jodi bought a pizza.

**Yes** - she went shopping

30.) Jodi had some of Dan’s pretzel.

**False** - never states that above