

Name _____ Date _____ Period _____

Geometry Chapter 2 Review

Determine if the conjecture is always true or false. If false, give a counter example.

1. Given: S, T and U are collinear and $ST = TU$
Conjecture: T is the midpoint of \overline{SU}

2. Given: $\angle 1$ and $\angle 2$ are adjacent angles
Conjecture: $\angle 1$ and $\angle 2$ form a linear pair

3. Given: Points A, B and C are collinear
Conjecture: $AB + BC = AC$

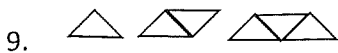
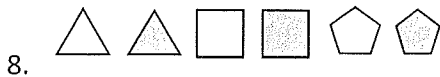
4. Given: $\angle A$ and $\angle B$ are complementary
Conjecture: $m\angle A = 45$

Make a conjecture about the next item in the sequence.

5. 1, 3, 9, 27, _____

6. $1, \frac{6}{5}, \frac{7}{5}, \frac{8}{5},$ _____

7. 12, 6, 3, 1.5, .75, _____



Use the following statements to write a compound statement for each. Then find its truth value.

p : $-3 - 2 = -5$

q : Vertical angles are adjacent

r : A hexagon has 6 sides

s : The sum of the measures of supplementary angles is 90

10. $p \wedge s$

11. $q \vee \sim r$

12. $s \vee \sim q$

13. $r \wedge \sim s$

For the following conditional statements, identify the hypothesis, conclusion, converse, inverse and contrapositive. Then tell which statements are true or false. If false, give a counter example.

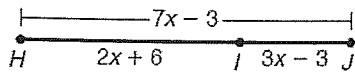
14. If you live in San Diego, then you live in California.

15. If two angles are vertical angles, then the angles are congruent.

19. Make a Truth Table that describes the following scenario: $\sim q \wedge (p \vee r)$

Write a justification for each step.

17.



$$HJ = HI + IJ$$

$$7x - 3 = (2x + 6) + (3x - 3)$$

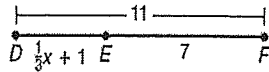
$$7x - 3 = 5x + 3$$

$$7x = 5x + 6$$

$$2x = 6$$

$$x = 3$$

18.



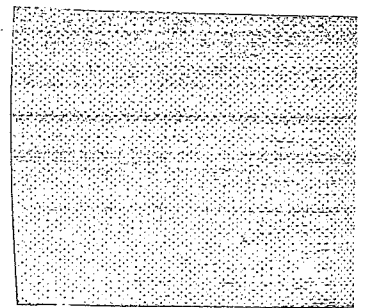
$$DE + EF = DF$$

$$\left(\frac{1}{3}x + 1\right) + 7 = 11$$

$$\frac{1}{3}x + 8 = 11$$

$$\frac{1}{3}x = 3$$

$$x = 9$$



Geometry Chapter 2 Review

Determine if the conjecture is always true or false. If false, give a counter example.

1. Given: S, T and U are collinear and $ST = TU$

Conjecture: T is the midpoint of \overline{SU}

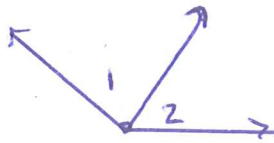
True



2. Given: $\angle 1$ and $\angle 2$ are adjacent angles

Conjecture: $\angle 1$ and $\angle 2$ form a linear pair

False



3. Given: Points A, B and C are collinear

Conjecture: $AB + BC = AC$

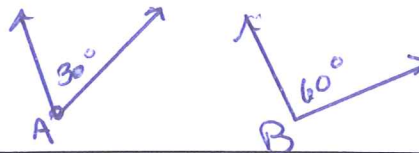
False



4. Given: $\angle A$ and $\angle B$ are complementary

Conjecture: $m\angle A = 45$

False



Make a conjecture about the next item in the sequence.

5. 1, 3, 9, 27, 81
 $\times 3 \times 3 \times 3 \times 3$

6. $1, \frac{6}{5}, \frac{7}{5}, \frac{8}{5}, \frac{9}{5}$
 $\div 2$

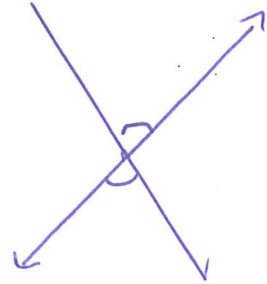
7. 12, 6, 3, 1.5, .75, .375

- 8.

- 9.

Use the following statements to write a compound statement for each. Then find its truth value.

- (T) p: $-3 - 2 = -5$
 (F) q: Vertical angles are adjacent
 (T) r: A hexagon has 6 sides
 (F) s: The sum of the measures of supplementary angles is 90



10. $p \wedge s$: $-3 - 2 = -5$ and the sum of the measures of supp. \angle 's is 90. False

11. $q \vee \sim r$: vertical angles are adjacent or a hexagon does NOT have 6 sides. False

12. $s \vee \sim q$: the sum of the measures of supplementary \angle 's is 90 or vertical angles are NOT adjacent. True

13. $r \wedge s$: A hexagon has 6 sides and the sum of the measures of supp. \angle 's is NOT 90. True

For the following conditional statements, identify the hypothesis, conclusion, converse, inverse and contrapositive. Then tell which statements are true or false. If false, give a counter example.

14. If you live in San Diego, then you live in California. True

Hypothesis Conclusion

converse: If you live in California, then you live in San Diego

False

Counter example: San Francisco

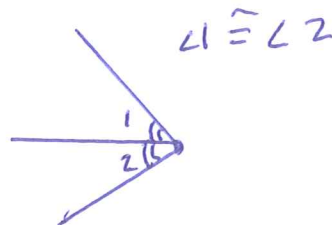
15. If two angles are vertical angles, then the angles are congruent. True

hypothesis conclusion

converse: If 2 angles are congruent, then they are vertical \angle 's.

False

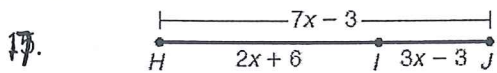
Counter Example



19. Make a Truth Table that describes the following scenario: $\sim q \wedge (p \vee r)$

P	q	r	$\sim q$	$P \vee r$	$\sim q \wedge (P \vee r)$
T	T	T	F	T	F
T	T	F	F	T	F
T	F	T	T	T	T
T	F	F	T	T	T
F	T	T	F	F	F
F	T	F	F	F	F
F	F	T	T	T	T
F	F	F	T	F	F

Write a justification for each step.



$$HJ = HI + IJ$$

$$7x - 3 = (2x + 6) + (3x - 3)$$

$$7x - 3 = 5x + 3$$

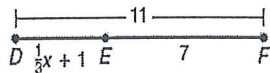
$$7x = 5x + 6$$

$$2x = 6$$

$$x = 3$$

- Given
- Substitution
- Substitution
- Addition
- Subtraction
- Division

18



$$DE + EF = DF$$

$$\left(\frac{1}{3}x + 1\right) + 7 = 11$$

$$\frac{1}{3}x + 8 = 11$$

$$\frac{1}{3}x = 3$$

$$x = 9$$

- Given
- Substitution
- Substitution
- Subtraction
- Multiplication

