Name Answers Date

Chapter 1 & 2 – Final Review

Identify each statement as true (T) or false (F)

1) T The ray from R through points P or Q is written in symbolic form as $\overrightarrow{RQ}$ or $\overrightarrow{RP}$.

2) F The line segment from P to Q is written in symbolic form as $\overline{RP}$.

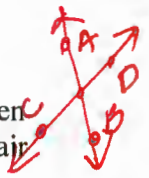
3) F The building blocks of geometry are points, lines, and ~~rays~~ planes.

4) F An obtuse angle is an angle whose measure is more than ~~180°~~ 90°.

5) T An altitude in an acute triangle is a perpendicular segment connecting a vertex with the opposite side.

6) F A diagonal is a line segment in a polygon connecting any two vertices. non-consecutive

7) F If $\overleftrightarrow{AB}$ intersects $\overleftrightarrow{CD}$ at point P, then $\angle APC$ and $\angle APD$ have to be a pair of vertical angles.



8) F If the sum of the measures of two angles is ~~90°~~ 180, then the two angles are supplementary

9) F If two lines do not intersect, then they are parallel. skew

10) T If two lines lie in the same plane are perpendicular to the same line, then they are parallel.

11) F A polygon with six sides is called a ~~heptagon~~ hexagon.

Match each term with its drawing below.

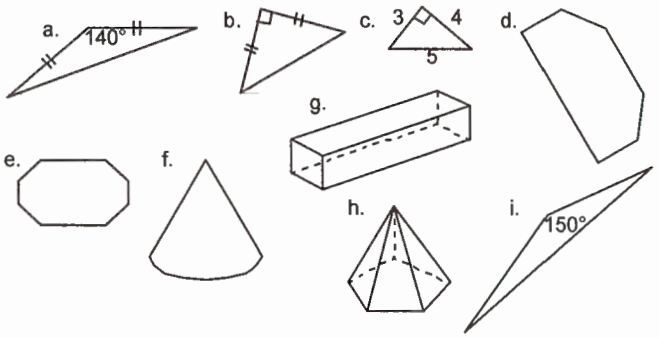
12) Isosceles right triangle b

13) Obtuse scalene triangle i

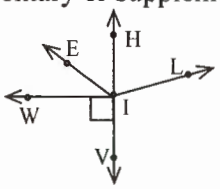
14) Octagon e

15) Hexagon d

16) Right scalene triangle c

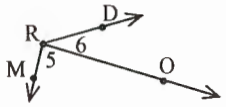


17) Name a pair of angles that are adjacent, but not complementary or supplementary.



a) ∠HIW and ∠HIE b) ∠HIE and ∠LIV
c) ∠HIW and ∠VIW d) ∠EIH and ∠HIL

18) Name all angles with R as their vertex.



a) ∠5, ∠6, ∠7 b) ∠DRO, ∠MRD, ∠ORM
c) ∠ORD, ∠MRD, ∠ROM d) ∠M, ∠O, ∠D

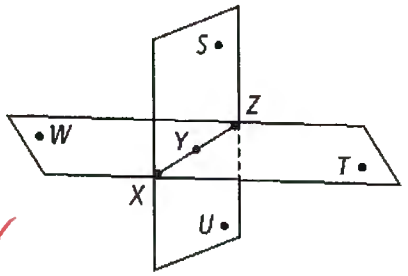
For #19-21, determine whether each statement is *always (A), sometimes (S),* or *never (N)* true.

19) A plane contains only three points. N
infinite

20) Three noncollinear points are contained in only one plane. A

21) If three points are coplanar, they are collinear. S

Use the diagram at the right for #22–24.



22) What is the intersection of the two planes? ~~XY~~ XZ

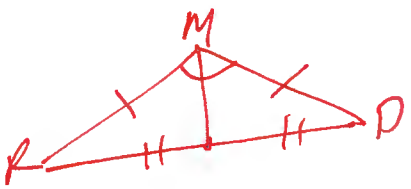
23) What plane contains points *W, X,* and *Y*? Plane WXY

24) Are points *T, Z, W,* and *U* coplanar or noncoplanar?

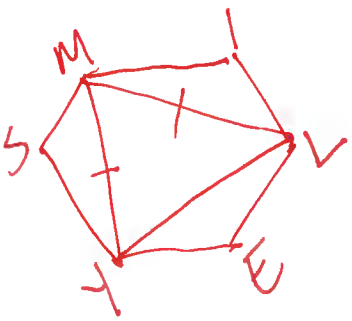
Non-coplanar

For #25 & 26, sketch, mark and label each figure

25) Isosceles obtuse ΔMRD with MR = MD and median $\overline{ME}$



26) A hexagon SMILEY with vertices Y, M, and L joined to form isosceles ΔYML



27) If $m\angle 1 = 9x$ and $m\angle 2 = 3x$. Find the value of x if $\angle 1$ and $\angle 2$ are supplementary.

$9x + 3x = 180$

$12x = 180$

$x = 15$

28) $\angle 1$ is complementary to $\angle 3$, $\angle 2$ is complementary to $\angle 3$. If $m\angle 2 = x + 24$ and $m\angle 3 = 8x - 6$, find $m\angle 1$.

$x + 24 + 8x - 6 = 90$

$9x + 18 = 90$

$9x = 72$

$x = 8$

$m\angle L = 32°$

Find the missing two terms in the sequence.

29) 3, 6, 9, 15, 24, 39, 63, 102

3 3 6 9 15 24 39

30) 1, 2, 5, 14 ,41, 122, 365, 1094

1 3 9 27 81 243 729

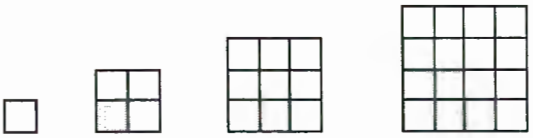
31) 0, 2, 6, 12, 20, 30, 42, 56

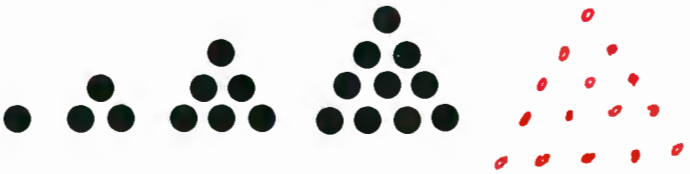
2 4 6 8 10 12 14

32) 1, 2/3, 4/9, 8/27, 16/81, 32/243

1/1 2/3 4/9 8/27

Draw the next shape in each pattern.

33) 

34) 

35) Find a counterexample to disprove the conjecture: "If the quotient of two numbers is positive, then the two numbers must be positive."

$\frac{-10}{-5} = 2$

36) Write the indicated form of the following statements. **Afterwards**, state if it's true or false.

"A square is a regular polygon."

If-then:

If it a square, then it is a regular polygon

True

Converse:

If it is a regular polygon, then it is a square

False

Inverse:

If it is not a square, then it is not a regular polygon.

False

Contrapositive:

If it is not a reg. polygon, then it is not a square.

True

In #37-39, determine the logical conclusion and state which law you used: Law of Detachment (LOD), Law of Contrapositive (LOC), or Law of Syllogism (LOS). If no conclusion can be drawn, write "no conclusion."

37) If you live in San Francisco, then you've seen the Golden Gate Bridge. Unfortunately, Josh has not seen the Golden Gate Bridge.

Then he doesn't live in S.F.

LOC

38) If a quadrilateral is a square, then it has four right angles. If a quadrilateral has four right angles, then it is a rectangle.

If a quadrilateral is a square, then it is a rectangle

~~No conclusion~~ LOS

39) If three points lie on the same line, they are collinear. Points A, B, and C lie on line k.

Then the points are collinear

LOD

40) Write the definition of an equiangular polygon as a single biconditional statement.

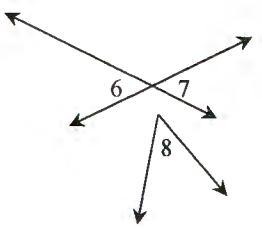
A polygon is equiangular if and only if all angles are congruent.

41) Complete the following truth table.

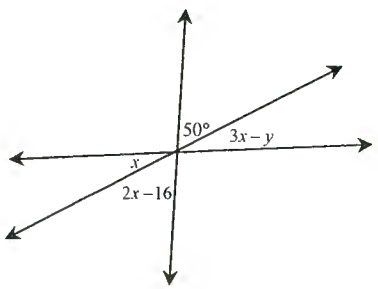
p	q	$\sim p$	$\sim p \wedge q$
T	T	F	F
T	F	F	F
F	T	T	T
F	F	T	F

42) Suppose you already stated that $\angle 6 \cong \angle 7$ and $\angle 7 \cong \angle 8$. What property of congruence justifies the conclusion that $\angle 6 \cong \angle 8$?

Transitive Property



43) Find the value of x and y for each diagram. (Not necessarily drawn to scale). Show all algebraic work.



$2x - 16 = 50$

$2x = 66$

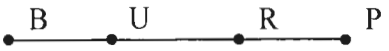
$\boxed{x = 33°}$

$33 = 99 - y$

$\boxed{y = 66°}$

Complete the following proofs:

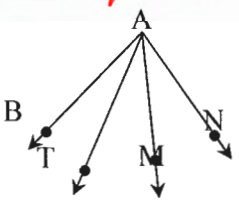
44) Given: $BR = UP$



Prove: $BU = RP$

Statement	Reasons
1. $BR = UP$	Given
2. $BR = BU + UR$; $UP = UR + RP$	Segment addition postulate
3. $BU + UR = UR + RP$	Substitution prop.
4. $UR = UR$	Reflexive prop
5. $BU = RP$	Sub. Prop of =

45) Given: $m\angle BAT = m\angle MAN$



Prove: $m\angle BAM = m\angle TAN$

Statement	Reasons
1. $m\angle BAT = m\angle MAN$	Given
2. $m\angle TAM = m\angle TAM$	Reflexive Property
3. $m\angle BAT + m\angle TAM = m\angle TAM + m\angle MAN$	Addition prop of =
4. $m\angle BAM = m\angle BAT + m\angle TAM$ $m\angle TAN = m\angle TAM + m\angle MAN$.	Angle addition postulate
5. $\therefore m\angle BAM = m\angle TAN$	Substitution