

Geometry Cumulative Study Guide

Test 2

Name: _____

Date: _____

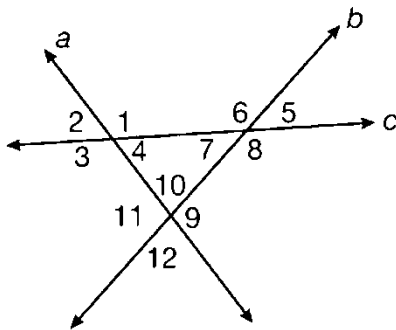
Period: _____

Numeric Response

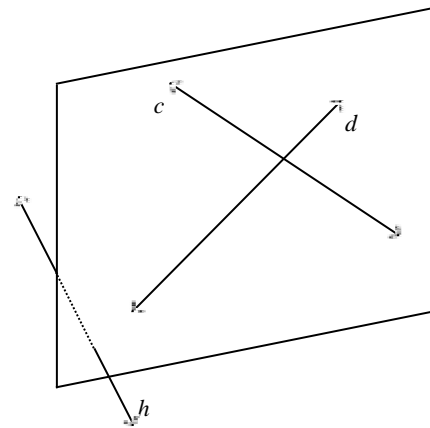
- How many non-coplanar planes define space?
- Point Y lies on \overleftrightarrow{XZ} between X and Z . $XY = 2$ and $XZ = 15$. Find YZ .
- Point F lies on \overline{EG} between E and G . $EF = 2$ and $EG = 14$. Find FG .
- Use inductive reasoning to find the next term in the series: 2, 6, 14, 30, 62, 126, 254, _____.
- Find the base of a rectangle, in inches, with an area of 30 square inches and height of 6 inches.
- Find the distance between the points $(1, -12)$ and $(9, -6)$.
- Find the measure of the angle formed by the hands of a clock when it is 3:00.

Problem

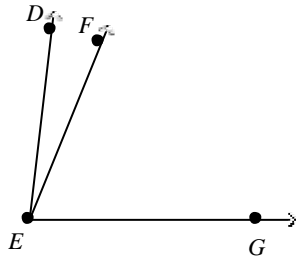
- Use the diagram to identify all pairs of corresponding angles with transversal c .



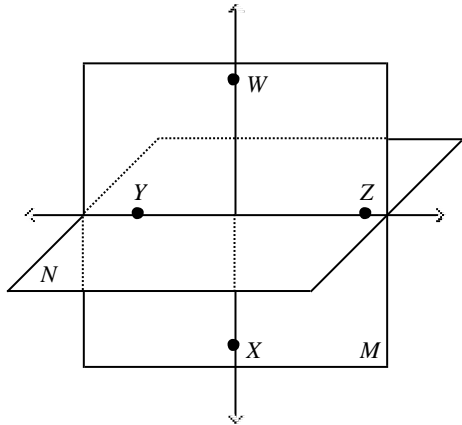
- Identify the coplanar and noncoplanar lines in the diagram below.



10. $m\angle DEF = 15^\circ$ and $m\angle FEG = 68^\circ$. Find $m\angle DEG$.
Classify $\angle DEG$.

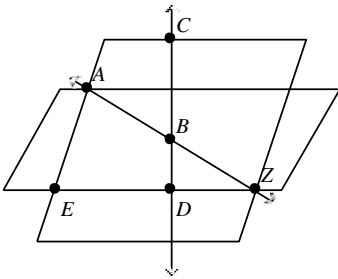


11. Name four points, two lines, and two planes in the diagram below.

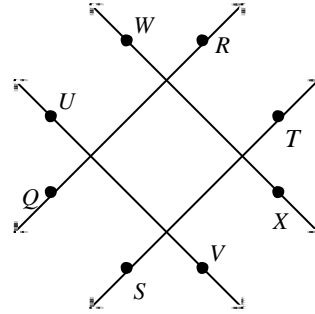


12. Describe the intersection of two lines.

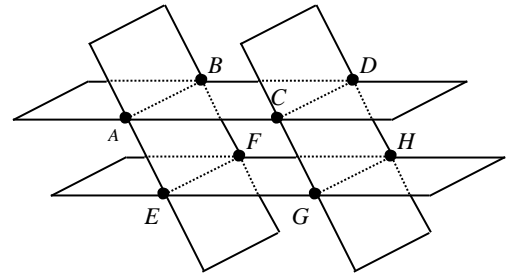
13. Among the labeled points, how many triples of collinear points are there in this figure? List these triples.



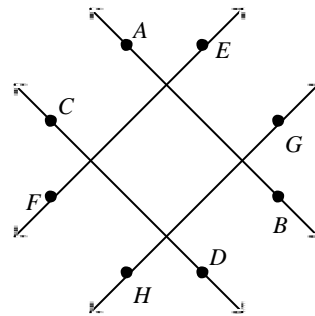
14. In the figure below, $\overleftrightarrow{WX} \parallel \overleftrightarrow{UV}$, $\overleftrightarrow{QR} \perp \overleftrightarrow{WX}$, and $\overleftrightarrow{ST} \perp \overleftrightarrow{WX}$. What is the relationship between \overleftrightarrow{QR} and \overleftrightarrow{ST} ?



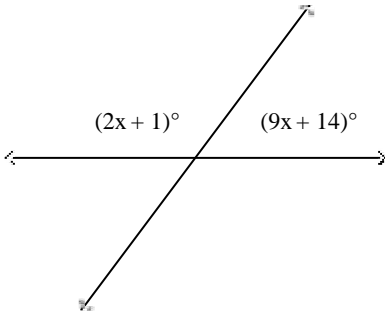
15. In the figure below, $\overleftrightarrow{AB} \parallel \overleftrightarrow{EF}$ and $\overleftrightarrow{EF} \parallel \overleftrightarrow{GH}$. What is the relationship between \overleftrightarrow{AB} and \overleftrightarrow{GH} ?



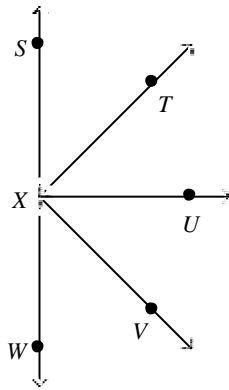
16. In the figure below, $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$, $\overleftrightarrow{EF} \perp \overleftrightarrow{AB}$, and $\overleftrightarrow{GH} \perp \overleftrightarrow{AB}$. What is the relationship between \overleftrightarrow{EF} and \overleftrightarrow{CD} ?



17. Find the value of x . Find the measures of the two supplementary angles.



18. Identify two sets of adjacent angles and one linear pair in the diagram below.

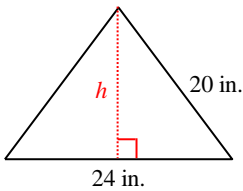


19. Determine if the following conditional statement is true. *If an angle is acute, then its measure is 45° .* If it is false, give an example which shows why it is false.

20. Determine whether the statement below is true or false. If it is false, explain your reasoning.
If a shape is a quadrilateral, then it is a parallelogram.

21. Two lines intersect in a plane and form four angles. One of the angles formed by this intersection is a 53° angle. What are the measures of the other three angles? Explain your answer.

22. Bradley buys a poster in the shape of an isosceles triangle that has a base of 24 in. The length of the two legs of the triangle is 20 in.
- Use the Pythagorean Theorem to find the height of the triangle.
 - Find the area of Bradley's poster.



Cumulative Study Guide Test 2 Geometry Answer Section

NUMERIC RESPONSE

1. ANS: 3

PTS: 1 REF: Lesson 1: Points, Lines, and Planes NAT: NCTM G.1a
TOP: Cumulative Test 2 MSC: Geom_S01_00053

2. ANS: 13

PTS: 1 REF: Lesson 2: Segments NAT: NCTM NO.3a
TOP: Cumulative Test 1 MSC: Geom_S01_00056

3. ANS: 12

PTS: 1 REF: Lesson 2: Segments NAT: NCTM NO.3a
TOP: Cumulative Test 4 MSC: Geom_S01_00059

4. ANS: 510

PTS: 1 REF: Lesson 7: Using Inductive Reasoning
NAT: NCTM RP.1a TOP: Cumulative Test 3
MSC: Geom_S01_00063

5. ANS: 5

PTS: 1 REF: Lesson 8: Using Formulas in Geometry
NAT: NCTM G.1d TOP: Cumulative Test 6 MSC: Geom_S01_00070

6. ANS: 10

PTS: 1 REF: Lesson 9: Finding Length: Distance Formula
NAT: NCTM G.1d TOP: Cumulative Test 4 MSC: Geom_S01_00073

7. ANS: 90

PTS: 1 REF: Lesson 3: Angles NAT: NCTM G.4d
MSC: Geom_S01_00075

PROBLEM

8. ANS:

Angles 1 and 5, 2 and 6, 3 and 7, 4 and 8

PTS: 1 REF: Investigation 1: Transversals and Angle Relationships
NAT: NCTM G.1b TOP: Cumulative Test 2 MSC: Geom_S01_00076

9. ANS:

Lines c and d are coplanar; line h is noncoplanar with lines c and d .

PTS: 1 REF: Lesson 1: Points, Lines, and Planes NAT: NCTM R.1a
TOP: Cumulative Test 3 MSC: Geom_S01_00082

10. ANS:

$m\angle DEG = 83^\circ$; acute

PTS: 1 REF: Lesson 3: Angles NAT: NCTM G.1d
TOP: Cumulative Test 1 MSC: Geom_S01_00090

11. ANS:

Points W, X, Y , and Z ; Lines \overleftrightarrow{WX} and \overleftrightarrow{YZ} ; Planes M and N

PTS: 1 REF: Lesson 4: Postulates and Theorems About Points, Lines, and Planes
NAT: NCTM G.1a TOP: Cumulative Test 1 MSC: Geom_S01_00101

12. ANS:

point

PTS: 1 REF: Lesson 4: Postulates and Theorems About Points, Lines, and Planes
NAT: NCTM CM.1d TOP: Cumulative Test 2
MSC: Geom_S01_00104

13. ANS:

3. $(A, B, Z), (C, B, D), (E, D, Z)$

PTS: 1 REF: Lesson 4: Postulates and Theorems About Points, Lines, and Planes
NAT: NCTM R.1a TOP: Cumulative Test 2 MSC: Geom_S01_00105

14. ANS:

$\overleftrightarrow{QR} \parallel \overleftrightarrow{ST}$

PTS: 1 REF: Lesson 5: More Theorems About Lines and Planes
NAT: NCTM G.1b TOP: Cumulative Test 1 MSC: Geom_S01_00107

15. ANS:

$\overleftrightarrow{AB} \parallel \overleftrightarrow{GH}$

PTS: 1 REF: Lesson 5: More Theorems About Lines and Planes
NAT: NCTM G.1b TOP: Cumulative Test 1 MSC: Geom_S01_00108

16. ANS:

$\overleftrightarrow{EF} \perp \overleftrightarrow{CD}$

PTS: 1 REF: Lesson 5: More Theorems About Lines and Planes
NAT: NCTM G.1b TOP: Cumulative Test 4 MSC: Geom_S01_00113

17. ANS:

15; 31 and 149

PTS: 1 REF: Lesson 6: Identifying Pairs of Angles
NAT: NCTM A.2b TOP: Cumulative Test 2 MSC: Geom_S01_00114

18. ANS:

There are many adjacent angles in the diagram. Two possible sets are $\angle SXT, \angle TXU$ and $\angle TXU, \angle UXV$. There are also several linear pairs. One is $\angle SXV$ and $\angle VXW$.

PTS: 1 REF: Lesson 6: Identifying Pairs of Angles
NAT: NCTM R.1a TOP: Cumulative Test 4 MSC: Geom_S01_00117

19. ANS:

False. Other angle measures are possible, e.g. 30°

PTS: 1 REF: Lesson 10: Using Conditional Statements
 NAT: NCTM RP.1c TOP: Cumulative Test 2
 MSC: Geom_S01_00125

20. ANS:

The hypothesis of this statement is true, but the conclusion is false. A trapezoid could be used to contradict this statement. Therefore, the statement is false.

PTS: 1 REF: Lesson 10: Using Conditional Statements
 NAT: NCTM RP.1b TOP: Cumulative Test 6
 MSC: Geom_S01_00129

21. ANS:

127° , 127° , and 53°

$$180^\circ - 53^\circ = 127^\circ$$

Two of the angles are supplementary to the 53° angle. They each measure $180^\circ - 53^\circ = 127^\circ$. The last angle is a vertical angle to the 53° angle, so it is congruent to the 53° angle.

PTS: 1 REF: Lesson 6: Identifying Pairs of Angles
 NAT: NCTM G.4d MSC: Geom_S01_00130

22. ANS:

a. 16 in.

$$a = 24 \div 2$$

$$a = 12$$

$$b^2 = 20^2 - 12^2$$

$$b = 400 - 144$$

$$b = \sqrt{256}$$

$$b = 16$$

$$h = 16$$

b. 192 in^2

$$A = \frac{1}{2} \times 24 \times 16$$

$$A = 192$$

PTS: 1 REF: Lesson 8: Using Formulas in Geometry
 NAT: NCTM G.1a MSC: Geom_S01_00132