Homeschool Testing Book

SAXON
GEOMETRY

- Cumulative Tests
- Answer Forms
- Answer Key

Homeschool Testing Book

SAXON™ GEOMETRY

Production/Design
Pearl Production, LLC

Contents

Homeschool Testing Book: Geometry SV 9781600329777

Introduction

The Saxon Homeschool Testing Book for Geometry contains Tests, a Testing Schedule, Test Answer Forms, and Test Solutions. Descriptions of these components are provided below.

About the Tests

The tests are available after every five lessons, beginning after Lesson 10. The tests are designed to provide students with sufficient time to learn and practice each concept before they are assessed. The test design allows students to display the skills they have developed, and it fosters confidence that will benefit students when they encounter comprehensive standardized tests.
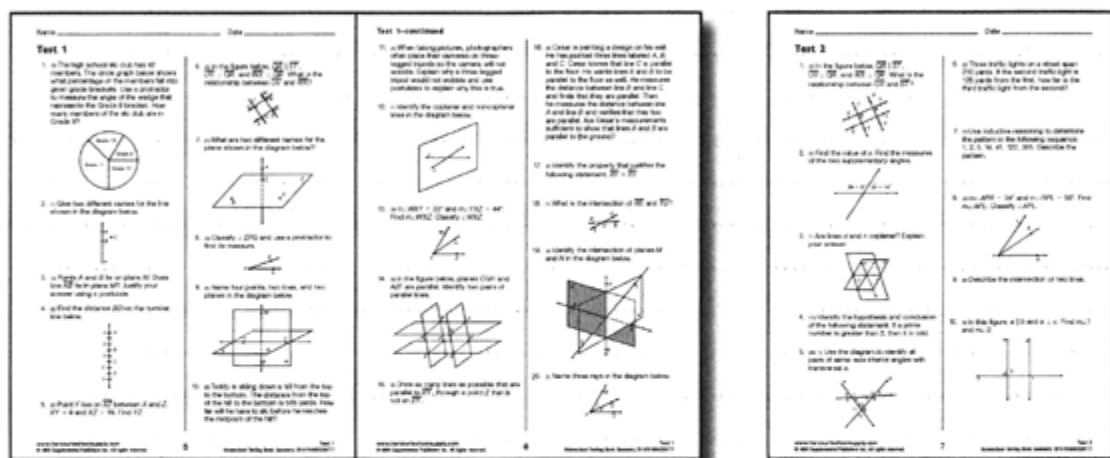
Testing Schedule

Administering the tests according to the schedule is essential. Each test is written to follow a specific five-lesson interval in the textbook. Following the schedule allows students sufficient practice on new topics before they are assessed on those topics.

Tests should be given after every fifth lesson, beginning after Lesson 10. The testing schedule is explained in greater detail on page 4 of this book.

Optional Test Solution Answer Forms are included in this book. Each form provides a structure for students to show their work.

About the Test Solution Answer Forms

This book contains three kinds of answer forms for the tests that you might find useful. These answer forms provide sufficient space for students to record their work on tests.

ANSWER FORM A: TEST SOLUTIONS

This is a double-sided master with a grid background and partitions for recording the solutions to twenty problems.

ANSWER FORM B: TEST SOLUTIONS

This is a double-sided master with a plain, white background and partitions for recording the solutions to twenty problems.

ANSWER FORM C: TEST SOLUTIONS

This is a single-sided master with partitions for recording the solutions to twenty problems and a separate answer column on the right-hand side.

Answer Form A

Answer Form B

Answer Form C

Test Solutions

The Test Solutions are designed to be representative of students' work. Please keep in mind that problems may have more than one correct solution. We have attempted to stay as close as possible to the methods and procedures outlined in the textbook.

Testing Schedule

Test to be administered:	Covers material through:	Give after teaching:
Test 1	Lesson 5	Lesson 10
Test 2	Lesson 10	Lesson 15
Test 3	Lesson 15	Lesson 20
Test 4	Lesson 20	Lesson 25
Test 5	Lesson 25	Lesson 30
Test 6	Lesson 30	Lesson 35
Test 7	Lesson 35	Lesson 40
Test 8	Lesson 40	Lesson 45
Test 9	Lesson 45	Lesson 50
Test 10	Lesson 50	Lesson 55
Test 11	Lesson 55	Lesson 60
Test 12	Lesson 60	Lesson 65
Test 13	Lesson 65	Lesson 70
Test 14	Lesson 70	Lesson 75
Test 15	Lesson 75	Lesson 80
Test 16	Lesson 80	Lesson 85
Test 17	Lesson 85	Lesson 90
Test 18	Lesson 90	Lesson 95
Test 19	Lesson 95	Lesson 100
Test 20	Lesson 100	Lesson 105
Test 21	Lesson 105	Lesson 110
Test 22	Lesson 110	Lesson 115
Test 23	Lesson 115	Lesson 120

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Name _____ Date _____

Test 1

1. (3) The high school ski club has 42 members. The circle graph below shows what percentage of the members fall into given grade brackets. Use a protractor to measure the angle of the wedge that represents the Grade 9 bracket. How many members of the ski club are in Grade 9?
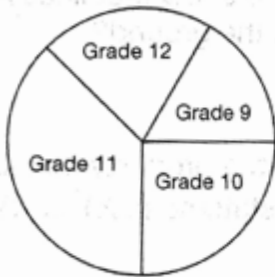
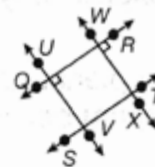2. (1) Give two different names for the line shown in the diagram below.
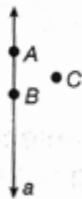
3. (4) Points A and B lie on plane M. Does line $\overleftrightarrow{AB}$ lie in plane M? Justify your answer using a postulate.

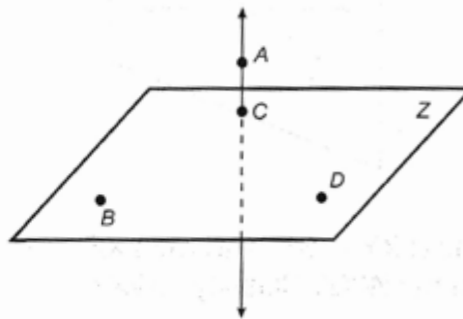4. (2) Find the distance BD on the number line below.
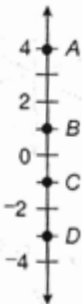
5. (2) Point Y lies on $\overline{XZ}$ between X and Z. XY = 9 and XZ = 19. Find YZ.

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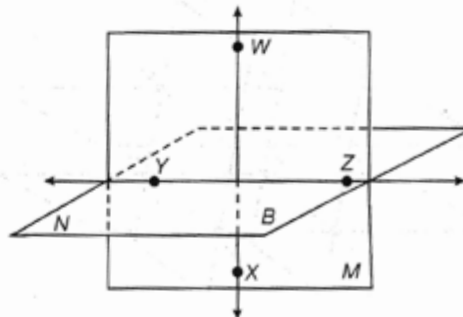

7. (1) What are two different names for the plane shown in the diagram below?

8. (3) Classify ∠ EFG and use a protractor to find its measure.

9. (4) Name four points, two lines, and two planes in the diagram below.

10. (2) Teddy is skiing down a hill from the top to the bottom. The distance from the top of the hill to the bottom is 565 yards. How far will he have to ski before he reaches the midpoint of the hill?

Test 1–continued

11. (4) When taking pictures, photographers often place their cameras on three-legged tripods so the camera will not wobble. Explain why a three-legged tripod would not wobble and use postulates to explain why this is true.

12. (1) Identify the coplanar and noncoplanar lines in the diagram below.
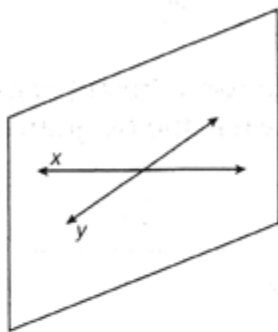
13. (3) m∠WXY = 33° and m∠YXZ = 44°. Find m∠WXZ. Classify ∠WXZ.
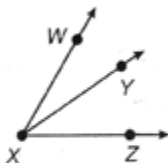
14. (5) In the figure below, planes CGH and AEF are parallel. Identify two pairs of parallel lines.
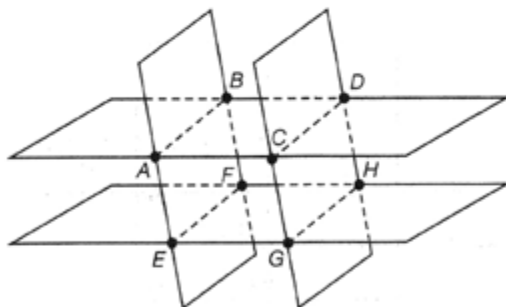
15. (5) Draw as many lines as possible that are parallel to $\overleftrightarrow{XY}$, through a point Z that is not on $\overleftrightarrow{XY}$.

16. (5) Cesar is painting a design on his wall. He has painted three lines labeled A, B, and C. Cesar knows that line C is parallel to the floor. He wants lines A and B to be parallel to the floor as well. He measures the distance between line B and line C and finds that they are parallel. Then he measures the distance between line A and line B and verifies that they too are parallel. Are Cesar's measurements sufficient to show that lines A and B are parallel to the ground?

17. (2) Identify the property that justifies the following statement. $\overline{XY} \cong \overline{XY}$
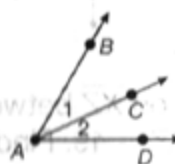
18. (1) What is the intersection of $\overleftrightarrow{RS}$ and $\overleftrightarrow{TU}$?
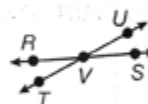
19. (4) Identify the intersection of planes M and N in the diagram below.
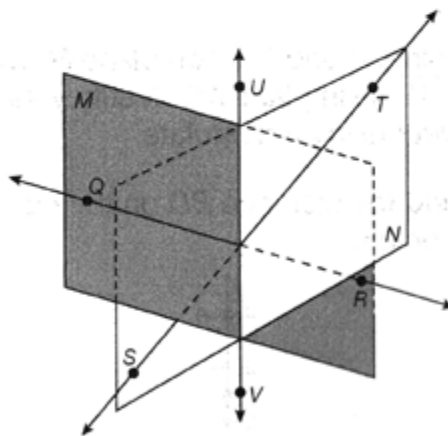
20. (3) Name three rays in the diagram below.

Test 2

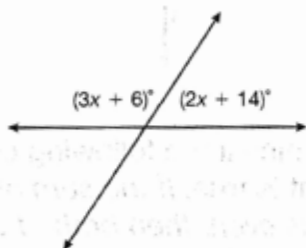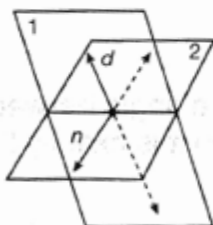1. (5) In the figure below, $\overleftrightarrow{QR} \parallel \overleftrightarrow{ST}$, $\overleftrightarrow{UV} \perp \overleftrightarrow{QR}$, and $\overleftrightarrow{WX} \perp \overleftrightarrow{QR}$. What is the relationship between $\overleftrightarrow{UV}$ and $\overleftrightarrow{ST}$?
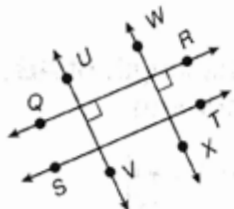
2. (6) Find the value of x. Find the measures of the two supplementary angles.
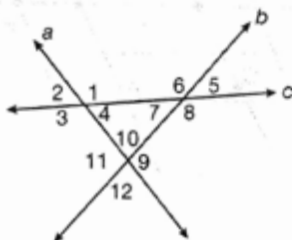

$(3x + 6)°$ $(2x + 14)°$

3. (1) Are lines d and n coplanar? Explain your answer.

4. (10) Identify the hypothesis and conclusion of the following statement: If a prime number is greater than 2, then it is odd.

5. (Inv. 1) Use the diagram to identify all pairs of same-side interior angles with transversal a.

6. (2) Three traffic lights on a street span 210 yards. If the second traffic light is 125 yards from the first, how far is the third traffic light from the second?
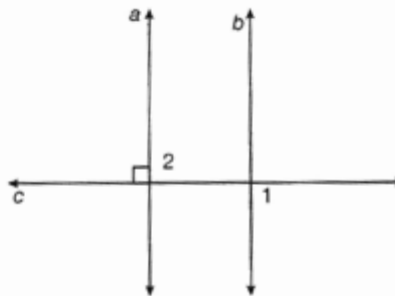
7. (7) Use inductive reasoning to determine the pattern in the following sequence: 1, 2, 5, 14, 41, 122, 365. Describe the pattern.

8. (3) $m\angle APR = 34°$ and $m\angle RPL = 56°$. Find $m\angle APL$. Classify $\angle APL$.
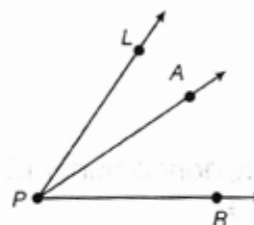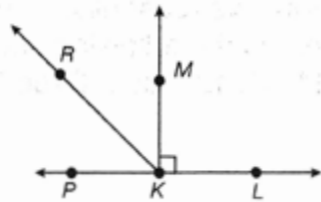

9. (4) Describe the intersection of two lines.

10. (5) In this figure, $a \parallel b$ and $a \perp c$. Find $m\angle 1$ and $m\angle 2$.

11. (8) Find the area of a right triangle with a hypotenuse of 17 m and a leg of 6 m. Round to the nearest hundredth.

12. (6) Which angle is complementary to $\angle RKP$? Which angle is supplementary to it?


13. (7) Use inductive reasoning to determine the next term in the series: 21, 26, 23, 28, 25, 30, 27, ____.

14. (1) How many noncoplanar planes define space?

15. (2) K, L, and M are collinear points such that L is between K and M. If $LM = 8 - 3x$ and $KM = 12x + 17$, find KL in terms of x.

16. (8) If a regular triangle has a perimeter of $18x + 27$, what is an expression for the length of one of its sides?

17. (9) What is the length of $\overline{AB}$? Round to the nearest hundredth.
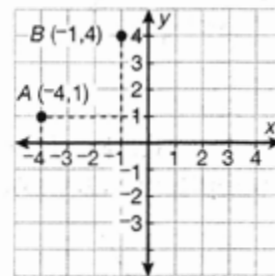
18. (10) Determine if the following conditional statement is true. *If the sum of two integers is even, then both of them are even.* If it is false, give an example that shows why it is false.
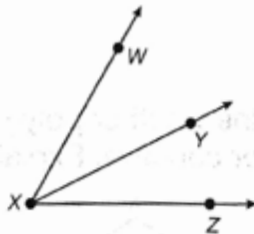
19. (3) What is the angle between the hands of a clock when it is exactly 2 o'clock?

20. (4) Among the labeled points, how many triples of collinear points are there in this figure? List these triples.
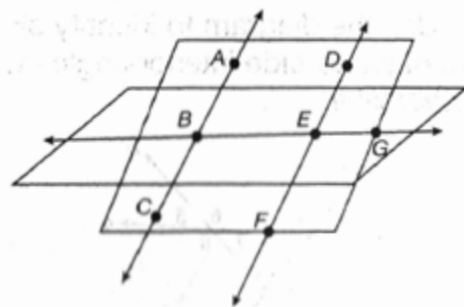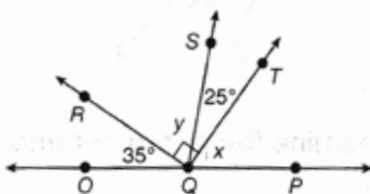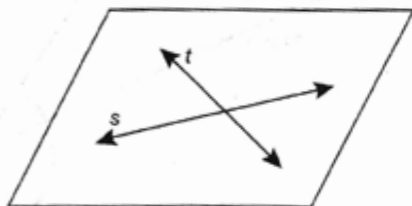
Test 3

1. (3) m∠WXY = 26° and m∠YXZ = 57°. Find m∠WXZ. Classify the angle.

2. (6) Determine the values of x and y in the diagram.
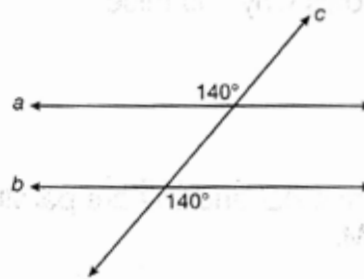

3. (1) Identify the coplanar and noncoplanar lines in the diagram below.

4. (14) Find a counterexample to this conjecture. If a quadrilateral has two pairs of congruent sides, it is a parallelogram.

5. (13) The base of a triangle measures 4 cm and its area is 21.4 cm². Determine the height of this triangle.
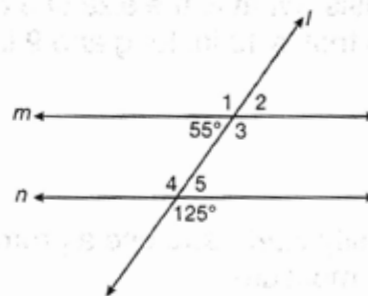
6. (12) Prove that lines a and b are parallel.

7. (7) Use inductive reasoning to determine the next term in the series: 1, 4, 10, 19, 31, 46, _____.

8. (8) Michael wants to carpet his living room floor. If the floor is a rectangle that is 16 feet by 21 feet, determine the area of the floor in square feet.

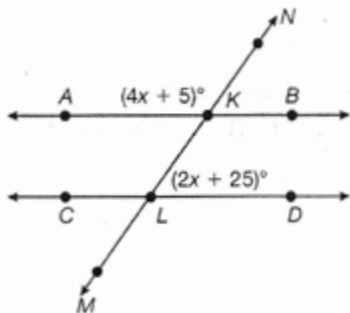9. (12) Prove that lines m and n are parallel.

10. (9) Calculate the distance between two points A(8, ⁻6) and B(12, ⁻3).

Test 3–continued

11. *(10)* Determine whether the following conditional statement is true. *If $x^2 = 64$, then $x = 8$.* If it is false, give an example that shows why it is false.

12. *(Inv. 1)* Lines $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ are parallel. Find $m\angle CLM$.


13. *(11)* Determine the midpoint of the line segment connecting $(^-1, 3)$ and $(^-6, ^-3)$.

14. *(8)* A rectangular computer screen is measured by the length of one of its diagonals. What is the size of a computer screen that is 12 in. long and 9 in. high?

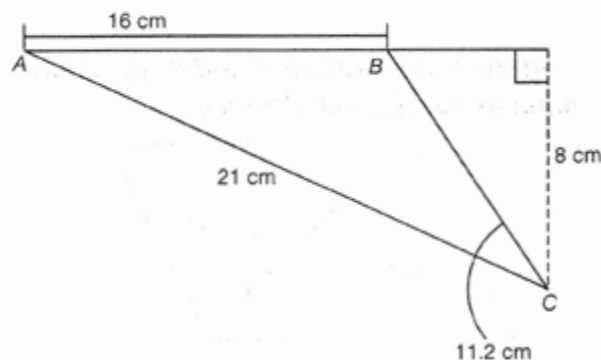**15.** *(3)* Classify $\angle JKL$ and use a protractor to find its measure.

16. *(11)* Determine the midpoint C of the line segment $\overline{AB}$ connecting $A(^-3, 5.2)$ and $B(4.6, ^-2.2)$.

17. *(15)* Determine whether polygon $JKLMNO$ is convex or concave. Explain.
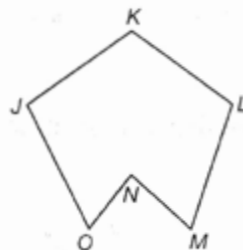
**18.** *(13)* Determine the perimeter and area of $\triangle ABC$.

19. *(10)* State the hypothesis and the conclusion of this conjecture. *If the product of two integers is divisible by 6, then one of these numbers is divisible by 3, and the other number is divisible by 2.* Is this conjecture true? Explain how you know.

20. *(14)* Find a counterexample to this conjecture. *The sum of any two integers that are greater than 1 is less than their product.*

Test 4

1. (17) Identify the hypothesis and the conclusion in the statement below. Then, write the negation of each.

   If Lucy buys a salad, then she buys a sandwich.

2. (1) What is the intersection of $\overrightarrow{AB}$ and $\overleftrightarrow{MN}$ in the diagram below?
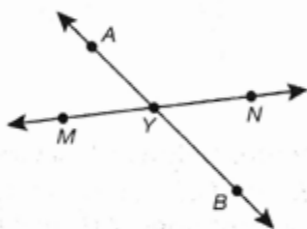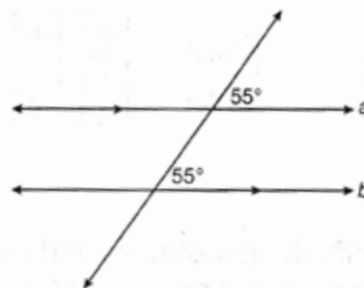

3. (Inv. 2) A right triangle has a hypotenuse of 30 inches and one leg that measures 24 inches. What is the length of the third side?

4. (6) Identify two sets of adjacent angles and one linear pair in the diagram below.
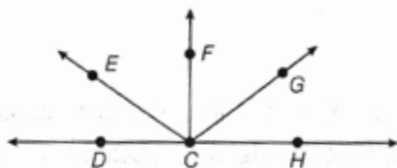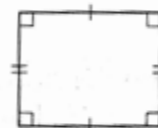

5. (9) Find the distance between the points $(-4, 6)$ and $(-4, -2)$.

6. (12) Prove that lines *a* and *b* in the diagram below are parallel.
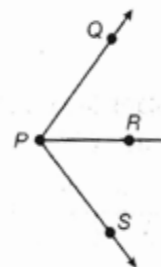

7. (15) Name the polygon below. Determine whether it is equiangular, equilateral, regular, irregular, or more than one of these.
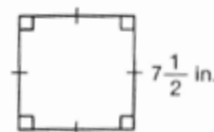

8. (18) In the right triangle *RST*, $m\angle S = 21°$ and the right angle is at vertex *R*. Find the measure of $\angle T$.

9. (3) Name three rays in the diagram below.

10. (19) Determine the perimeter and area of the square below.

$7\frac{1}{2}$ in.

Test 4–continued

11. (7) Look at the progression of the pattern below and formulate a conjecture regarding the number of squares there will be in the fifth step of this pattern.
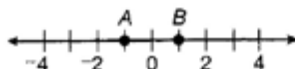

12. (10) Identify the hypothesis and conclusion of the conditional statement below.

If $3x - 2 = 7$, then $x = 3$.

13. (2) Point Q lies on $\overline{PR}$ between P and R. $PQ = 7$ and $PR = 15$. Find QR.
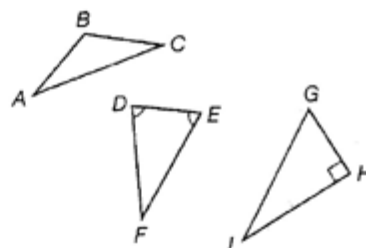
14. (16) Write the equation of the line that has slope $\frac{1}{2}$ and passes through $(6, {}^-2)$.

15. (11) On the number line below, what is the midpoint of A and B?
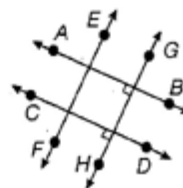

16. (20) Use a truth table to represent the statement, "If $x^2 \leq 49$, then $x \leq 7$." Interpret the table for this statement.

17. (13) In the diagram, which triangle is obtuse?

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

19. (8) Find the perimeter of a triangle with congruent side lengths all equal to 3.1 meters.

20. (4) Points X and Y lie on plane E. Does $\overleftrightarrow{XY}$ lie in plane E? Justify your answer using a postulate.

Test 5

1. (21) Use deductive reasoning to form a "Therefore" concluding statement from the given statements below.

   All members of the football team attended the awards banquet. Joe is a member of the football team.

2. (23) Name the circle. Identify a diameter, a radius, and the center of the circle.
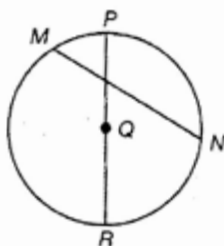
3. (1) Name three collinear points and three noncollinear points in the diagram below.
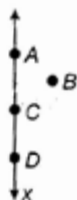
4. (7) Ben made the conjecture that the expression $2n + 1$ will always result in a prime number. Show that this conjecture is true for $n = 1, 2,$ and 3, but not for $n = 4$.

5. (14) Find a counterexample to the conjecture below.

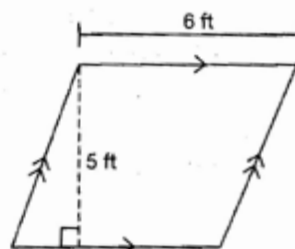   *If a triangle is acute, then it is equiangular.*

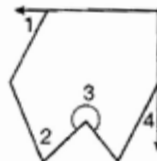6. (12) Prove that lines a and b in this figure are parallel.
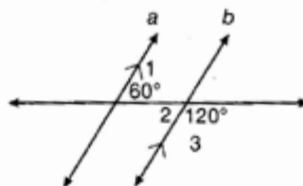
7. (3) $m\angle FEG = 7°$ and $m\angle GEH = 28°$. Find $m\angle FEH$. Classify $\angle FEH$.

8. (22) Find the area of the parallelogram below.

9. (15) For each numbered angle in the polygon, determine whether it is an interior angle or an exterior angle.

10. (8) Use the formula $F° = \frac{9}{5}(C°) + 32°$ to find the temperature in degrees Celsius when it is $86°F$.

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