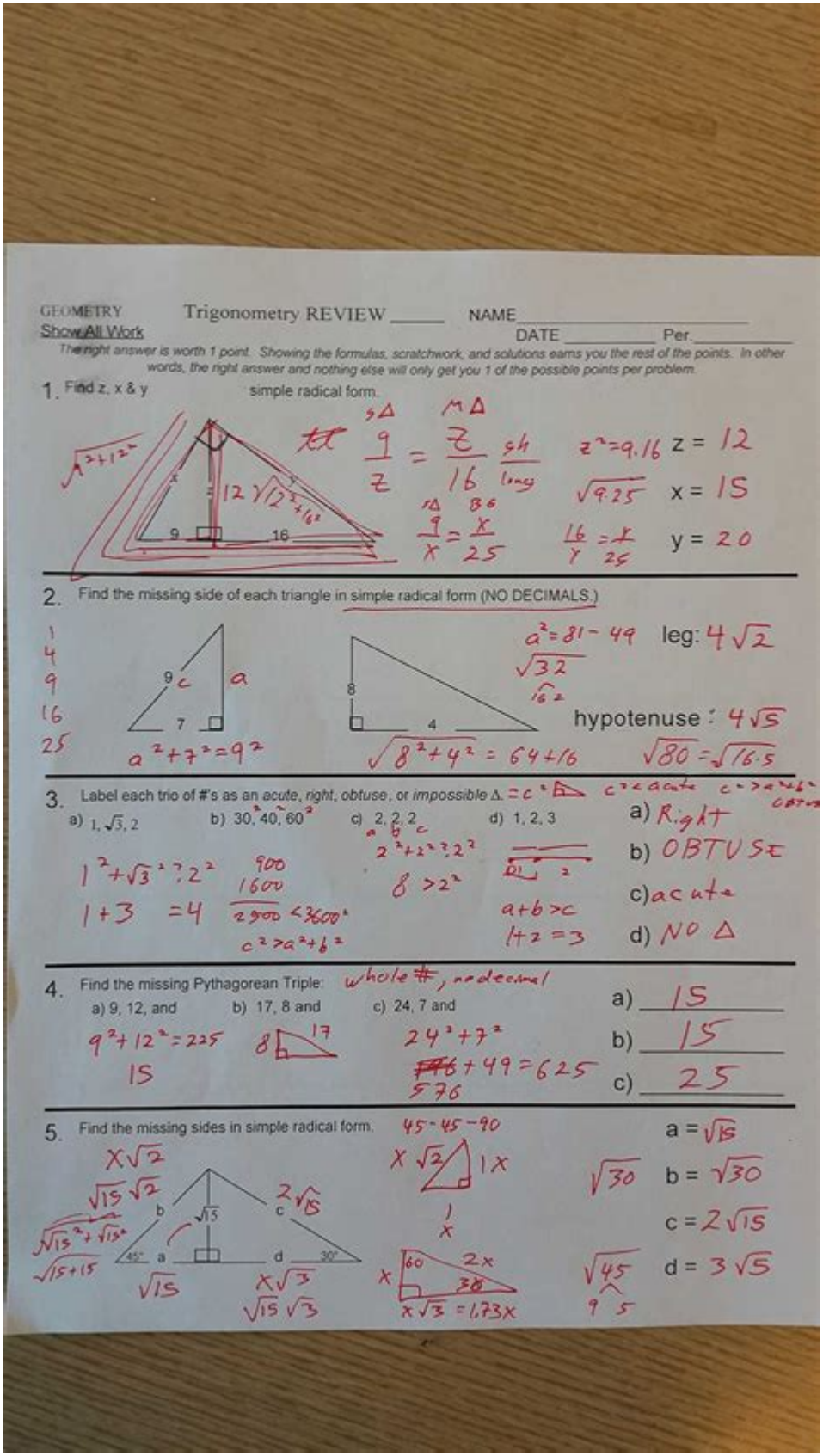
Unit 1 Test Geometry Basics



GEOMETRY Trigonometry REVIEW _____ NAME _____

Show All Work DATE _____ Per. _____

The right answer is worth 1 point. Showing the formulas, scratchwork, and solutions earns you the rest of the points. In other words, the right answer and nothing else will only get you 1 of the possible points per problem.

1. Find z, x & y simple radical form.

$z^2 = 9 \cdot 16$ $z = 12$

$\sqrt{9 \cdot 25}$ $x = 15$

$y = 20$

2. Find the missing side of each triangle in simple radical form (NO DECIMALS.)

$a^2 = 81 - 49$ leg: $4\sqrt{2}$

$\sqrt{32}$

hypotenuse: $4\sqrt{5}$

$\sqrt{80} = \sqrt{16 \cdot 5}$

3. Label each trio of #'s as an *acute*, *right*, *obtuse*, or *impossible* Δ.

a) 1, $\sqrt{3}$, 2 — $1^2 + \sqrt{3}^2 ? 2^2$ $1 + 3 = 4$ — a) Right

b) 30, 40, 60 — 900 1600 $2500 < 3600$ $c^2 > a^2 + b^2$ — b) OBTUSE

c) 2, 2, 2 — $2^2 + 2^2 ? 2^2$ $8 > 2^2$ — c) acute

d) 1, 2, 3 — $a + b > c$ $1 + 2 = 3$ — d) NO Δ

4. Find the missing Pythagorean Triple: whole #, no decimal

a) 9, 12, and — $9^2 + 12^2 = 225$ 15 — a) 15

b) 17, 8 and — 8, 17 — b) 15

c) 24, 7 and — $24^2 + 7^2$ $576 + 49 = 625$ — c) 25

5. Find the missing sides in simple radical form.

45-45-90 — $x\sqrt{2}$ $1x$ — a = $\sqrt{15}$

$\sqrt{30}$ b = $\sqrt{30}$

c = $2\sqrt{15}$

$\sqrt{45}$ d = $3\sqrt{5}$

$\sqrt{15}$ $\sqrt{15}$ $\sqrt{15}$ $x\sqrt{3}$ $\sqrt{15}\sqrt{3}$

60 2x 30 $x\sqrt{3} = 1.73x$

Ace Your Unit 1 Test: Geometry Basics Conquered!

Are you staring down the barrel of your Unit 1 Geometry test, feeling overwhelmed by angles, lines, and shapes? Don't panic! This comprehensive guide is designed to help you master the fundamental concepts and ace that test. We'll break down key geometry basics, providing clear explanations, helpful examples, and strategies for tackling common problem types. This isn't just a study guide; it's your roadmap to geometry success. Let's dive into the essentials to conquer your "unit 1 test geometry basics"!

Understanding Basic Geometric Shapes and Definitions (Unit 1 Test Geometry Basics)

Before tackling complex problems, let's solidify our understanding of the building blocks. This section will cover essential definitions and properties crucial for your "unit 1 test geometry basics."

H2: Points, Lines, and Planes:

Points: A point is a precise location in space, represented by a dot. It has no dimension – no length, width, or height. Think of it as an infinitely small location.

Lines: A line is a straight path extending infinitely in both directions. It is defined by two points and represented by an arrow on either end. A line segment is a portion of a line between two points. A ray is a portion of a line that starts at a point and extends infinitely in one direction.

Planes: A plane is a flat, two-dimensional surface that extends infinitely in all directions. It can be visualized as a tabletop that extends forever.

H2: Angles and Angle Measurement:

Angles: An angle is formed by two rays that share a common endpoint called the vertex. Angles are measured in degrees (°).

Types of Angles:
Acute Angle: An angle measuring less than 90°.
Right Angle: An angle measuring exactly 90°.
Obtuse Angle: An angle measuring greater than 90° but less than 180°.
Straight Angle: An angle measuring exactly 180°.
Reflex Angle: An angle measuring greater than 180° but less than 360°.

H3: Angle Relationships:

Complementary Angles: Two angles whose sum is 90°.
Supplementary Angles: Two angles whose sum is 180°.

Vertical Angles: Angles opposite each other when two lines intersect. They are always equal.

Polygons: Properties and Classification (Unit 1 Test Geometry Basics)

Polygons are closed figures made up of line segments. Understanding their properties is key to success on your "unit 1 test geometry basics".

H2: Types of Polygons:

Triangles: Three-sided polygons. Equilateral (all sides equal), Isosceles (two sides equal), Scalene (no sides equal). Also categorized by angles: Acute, Right, Obtuse.

Quadrilaterals: Four-sided polygons. Includes squares, rectangles, parallelograms, rhombuses, trapezoids, and kites. Each has its own unique properties.

Pentagons: Five-sided polygons.
Hexagons: Six-sided polygons.
And so on…

H2: Polygon Properties:

Interior Angles: The sum of the interior angles of a polygon can be calculated using the formula (n-2) 180°, where 'n' is the number of sides.

Exterior Angles: The sum of the exterior angles of any polygon is always 360°.

Circles and Their Properties (Unit 1 Test Geometry Basics)

Circles represent another fundamental geometric shape. Mastering their components is vital for your "unit 1 test geometry basics".

H2: Key Terms:

Radius: The distance from the center of the circle to any point on the circle.
Diameter: The distance across the circle through the center (twice the radius).
Circumference: The distance around the circle. Formula: $C = 2\pi r$ or $C = \pi d$.
Area: The space enclosed by the circle. Formula: $A = \pi r^2$.

Problem-Solving Strategies for Your Unit 1 Test

To excel on your "unit 1 test geometry basics," practice applying these strategies:

Draw Diagrams: Always sketch a diagram to visualize the problem.
Label Clearly: Label angles, sides, and other components accurately.
Identify Relationships: Look for relationships between angles, lines, and shapes.
Use Formulas: Apply appropriate formulas for calculating angles, areas, and perimeters.
Check Your Work: Review your solutions to ensure accuracy.

Conclusion

Mastering the basics of geometry is crucial for success in higher-level math. This guide provides a solid foundation for acing your Unit 1 test. Remember to practice regularly, review key concepts, and utilize the problem-solving strategies discussed. Good luck!

FAQs

1. What is the difference between a rhombus and a square? A rhombus has four equal sides but its angles are not necessarily right angles. A square is a rhombus with four right angles.

2. How do I find the area of an irregular polygon? You might need to break the polygon into smaller, regular shapes (like triangles and rectangles) whose areas you can calculate individually and then add them together.

3. What are similar triangles? Similar triangles have the same shape, but not necessarily the same size. Their corresponding angles are equal, and their corresponding sides are proportional.

4. How can I improve my geometry visualization skills? Practice drawing diagrams and using manipulatives (like building blocks or geometry software) to visualize shapes and their properties in three dimensions.

5. Where can I find more practice problems for Unit 1 Geometry? Your textbook, online resources (like Khan Academy), and practice workbooks are all excellent places to find additional practice problems.

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