NWEA Math 5th Grade Practice Test (Sample)

Study Guide

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Questions

1. A triangle that has three equal sides is called what?

A. Acute triangle

B. Equilateral triangle

C. Isosceles triangle

D. Scalene triangle

2. What is the value of the expression: 3(4 + 2)?

A. 18

B. 20

C. 22

D. 24

3. What metric unit is commonly used to measure liquids?

A. Pint

B. Gallon

C. Litre

D. Cup

4. What is the name of a triangle that includes one angle greater than 90 degrees?

A. Acute triangle

B. Right triangle

C. Obtuse triangle

D. Scalene triangle

5. Find the missing number: 5 + ___ = 12.

A. 6

B. 7

C. 8

D. 9

6. What do "OR" statements create on a number line?

A. Intersection

B. Union

C. System

D. Exclusion

7. What is the term for a figure that has height, width, and depth?

A. Two-dimensional

B. Flat shape

C. One-dimensional

D. Three-dimensional

8. What term describes a measure of the size of a body or region in three-dimensional space?

A. Area

B. Volume

C. Density

D. Mass

9. Which of the following is NOT a standard measurement for liquid volume?

A. Liter

B. Pint

C. Yard

D. Gallon

10. What term describes the total number that results when adding fractions with a common denominator?

A. Fraction Addition

B. Fraction Subtraction

C. Mixed Number

D. Decimal Place Value

Answers

1. B
2. A
3. C
4. C
5. B
6. B
7. D
8. B
9. C
10. A

Explanations

1. A triangle that has three equal sides is called what?

A. Acute triangle

B. Equilateral triangle

C. Isosceles triangle

D. Scalene triangle

A triangle that has three equal sides is called an equilateral triangle. This is because, by definition, an equilateral triangle has all three sides of the same length, which also leads to all three internal angles being equal, each measuring 60 degrees. This specific property of having equal sides and angles distinguishes it from other types of triangles. In contrast, an acute triangle is characterized by all angles being less than 90 degrees, but it does not specify anything about the sides being equal. An isosceles triangle has at least two sides that are equal in length, but not necessarily all three. A scalene triangle, on the other hand, has all sides of different lengths, and therefore cannot be equilateral. Thus, the definition and characteristics of an equilateral triangle clearly establish why this is the correct answer.

2. What is the value of the expression: 3(4 + 2)?

A. 18

B. 20

C. 22

D. 24

To find the value of the expression 3(4 + 2), you need to follow the order of operations, often remembered by the acronym PEMDAS (Parentheses, Exponents, Multiplication and Division (from left to right), Addition and Subtraction (from left to right)). Start by simplifying the expression inside the parentheses. Here, 4 + 2 equals 6. So, the expression can be rewritten as 3(6). Next, you perform the multiplication. Multiply 3 by 6, which gives you 18. Thus, the value of the expression 3(4 + 2) is 18. This matches the first answer choice.

3. What metric unit is commonly used to measure liquids?

A. Pint

B. Gallon

C. Litre

D. Cup

The liter is the commonly used metric unit for measuring liquids because it is part of the metric system, which is designed for scientific and everyday use across many countries. The liter (spelled 'litre' in some regions) is defined as the volume of a cube that measures 10 cm on each side, which equals 1,000 cubic centimeters. This unit provides a clear and standardized way to express liquid volumes, making it convenient for various applications, such as cooking, chemistry, and other scientific fields. The other units mentioned, such as pint, gallon, and cup, are part of the imperial system, which is different from the metric system. While these units are widely used in certain countries, especially for everyday measurements in cooking and beverage servings, they do not fit within the framework of the metric system that relies on liters for liquid measurements. This distinction makes the liter the most appropriate choice for measuring liquids in a metric context.

4. What is the name of a triangle that includes one angle greater than 90 degrees?

A. Acute triangle

B. Right triangle

C. Obtuse triangle

D. Scalene triangle

A triangle that includes one angle greater than 90 degrees is known as an obtuse triangle. In geometry, triangles are categorized based on the measures of their angles. An obtuse triangle specifically has one angle that is obtuse, meaning it measures more than 90 degrees but less than 180 degrees. Because of this characteristic, the other two angles in the triangle must be acute (less than 90 degrees) in order to comply with the triangle sum theorem, which states that the sum of the interior angles of a triangle must equal 180 degrees. The classification of triangles is crucial in geometry, and knowing the properties of obtuse triangles helps students understand different types of angles and how they relate to triangle formation. The other classifications, such as acute or right triangles, refer to different angle measures, while a scalene triangle is defined by having all sides of different lengths but does not necessarily specify angle measures.

5. Find the missing number: 5 + ___ = 12.

A. 6

B. 7

C. 8

D. 9

To find the missing number in the equation 5 + ___ = 12, you're essentially determining what number can be added to 5 to result in 12. Start by focusing on the given total, which is 12. To isolate the missing number, subtract 5 from 12: 12 - 5 = 7. This calculation reveals that the missing number is 7, as adding it to 5 gives you 12: 5 + 7 = 12. In the context of the choices provided, 7 is indeed the only number that satisfies the equation.

6. What do "OR" statements create on a number line?

A. Intersection

B. Union

C. System

D. Exclusion

"OR" statements in the context of mathematics, particularly when discussing inequalities or sets, create a union on a number line. When you have an "OR" statement, it means that any value satisfying either condition is included in the solution set. For example, if one condition states that $x < 2$ and another states $x > 5$, the solution set includes all numbers less than 2 and all numbers greater than 5. On a number line, this is represented as two distinct sections, with everything to the left of 2 and everything to the right of 5 being included in the solution. In set theory, a union indicates the combination of all elements from the involved sets, allowing for a broader range of solutions. This is why "OR" statements create a union, ensuring all possible solutions are utilized, thus making the correct choice clear.

7. What is the term for a figure that has height, width, and depth?

A. Two-dimensional

B. Flat shape

C. One-dimensional

D. Three-dimensional

A figure that has height, width, and depth is referred to as three-dimensional. This means it occupies space and can be perceived from multiple angles, offering a sense of form and volume. Common examples of three-dimensional figures include cubes, spheres, and pyramids. In contrast, a two-dimensional figure only has height and width without depth, existing only on a flat plane. It cannot be rotated or viewed from different angles in the same way a three-dimensional object can. One-dimensional objects possess only one measurement, either just length or height, making them even less complex than two-dimensional shapes. Flat shapes relate closely to two-dimensional figures, but do not encapsulate the concept of depth that is essential to three-dimensional figures. Therefore, three-dimensional specifically describes shapes that encompass all three spatial dimensions, distinctly identifying them from the other terms provided.

8. What term describes a measure of the size of a body or region in three-dimensional space?

A. Area

B. Volume

C. Density

D. Mass

The term that describes a measure of the size of a body or region in three-dimensional space is volume. Volume quantifies the amount of space an object occupies and is typically measured in cubic units, such as cubic centimeters or cubic meters. This is an essential concept in geometry and is used in various applications, from calculating how much liquid a container can hold to understanding the capacity of three-dimensional objects. In comparison, area measures the size of a two-dimensional surface and is expressed in square units. Density refers to the mass of an object divided by its volume, giving a measure of how compact or concentrated matter is within a certain volume. Mass is a measure of the amount of matter in an object and is typically expressed in grams or kilograms, but it does not specifically relate to three-dimensional space. Hence, volume is the most appropriate term for describing the size of a three-dimensional body or region.

9. Which of the following is NOT a standard measurement for liquid volume?

A. Liter

B. Pint

C. Yard

D. Gallon

The measure of liquid volume includes units that are commonly used to quantify the amount of liquid a container can hold. Liters, pints, and gallons are all standard units used for measuring liquid volume. A liter is part of the metric system and is widely used around the world to measure liquids. A pint is commonly used in the United States and some other countries, and a gallon is another unit, particularly used in the U.S. for larger quantities of liquid. In contrast, a yard is a unit of length, not a measure of volume. It is used to measure distance or height, which makes it entirely unrelated to liquid measurement. This distinction clarifies why the yard does not fit with the other options provided. Understanding the different types of measurement units is essential in math and everyday life, especially when dealing with recipes, scientific experiments, or any scenario that involves liquids.

10. What term describes the total number that results when adding fractions with a common denominator?

A. Fraction Addition

B. Fraction Subtraction

C. Mixed Number

D. Decimal Place Value

The correct term for the total number that results when adding fractions with a common denominator is "Fraction Addition." When you add fractions that share a common denominator, you combine the numerators while keeping the denominator the same. This process is straightforward because the common denominator ensures that the fractions represent parts of the same whole. For example, if you are adding 1/4 and 2/4, you add the numerators (1 + 2) to get 3, and the denominator remains 4, resulting in 3/4. This operation is foundational in fractions and is essential for understanding how to work with them effectively in various mathematical contexts. The other choices refer to different concepts: Fraction Subtraction refers to taking one fraction away from another, Mixed Number denotes a whole number combined with a fraction, and Decimal Place Value pertains to the value of digits in a decimal number. Each of these describes different operations or types of numbers, but they do not apply to the process of adding fractions with a common denominator.