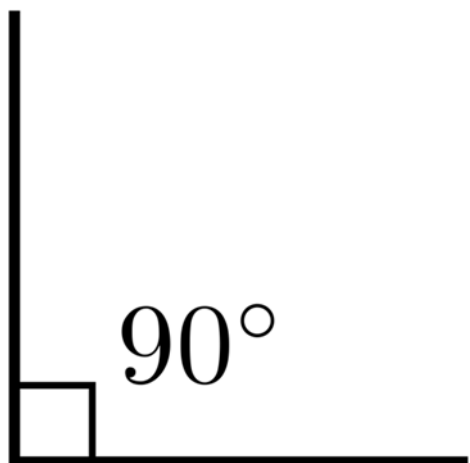


Name \_\_\_\_\_



## Unraveling Trigonometric Treasures: Finding Values for Common Angles

Trigonometry can seem like a maze of angles and functions, but fear not! We're here to guide you through the process of finding values for common angles like  $0^\circ$ ,  $30^\circ$ ,  $45^\circ$ ,  $60^\circ$ , and  $90^\circ$ . By understanding a few simple tricks, you'll unlock the secrets of these angles in no time!

Let's start with the simplest angle:  $0^\circ$ . At  $0^\circ$ , the sine of the angle is 0, the cosine is 1, and the tangent is  $0/1$ , which is also 0. Why? Because at  $0^\circ$ , the angle lies along the x-axis, so the y-coordinate is 0 and the x-coordinate is 1.

Next up, we have  $30^\circ$ . At  $30^\circ$ , the sine is  $1/2$ , the cosine is  $\sqrt{3}/2$ , and the tangent is  $1/\sqrt{3}$ . How do we find these values? By drawing a 30-60-90 right triangle and using the ratios of its sides.

Moving on to  $45^\circ$ , also known as the golden angle. At  $45^\circ$ , the sine and cosine are both  $\sqrt{2}/2$ , and the tangent is 1. This angle is special because it divides the right angle of a right triangle into two equal parts, creating an isosceles right triangle.

Now, let's tackle  $60^\circ$ . At  $60^\circ$ , the sine is  $\sqrt{3}/2$ , the cosine is  $1/2$ , and the tangent is  $\sqrt{3}$ . Again, we use the ratios of sides in a 30-60-90 triangle to find these values.

Finally, we have  $90^\circ$ , the right angle. At  $90^\circ$ , the sine is 1, the cosine is 0, and the tangent is undefined (since division by 0 is undefined). In a right triangle, the side opposite the right angle is the longest side, so the sine is 1.

By understanding these values for common angles, you'll be well-equipped to tackle trigonometric problems and navigate the world of mathematics with confidence. So, go forth and conquer those angles!

