r/ThingsYouDidntKnow • 6 days ago
TheStocksGuy

Fibonacci Numbers (Colored Lines)

Fibonacci Sequence Numbers: I thought I had already played around with this, but I may have just lost track of which chart or wordplay I used to work on it. I've seen a few ways to resolve values, but mostly working right to left in a pattern can result in a solution with subtraction, while moving forwards results in a positive.

- 1 - 1 = 0 : true
- 2 - 1 = 1 : true
- 3 - 2 = 1 : true
- 5 - 3 = 2 : true
- 8 - 5 = 3 : true
- 13 - 8 = 5 : true
- 21 - 13 = 8 : true
- 34 - 21 = 13 : true
- 55 - 34 = 21 : true
- 89 - 55 = 34 : true
- 144 - 89 = 55 : true
- 233 - 144 = 89 : true
- 377 - 233 = 144 : true
- 610 - 377 = 233 : true
- 987 - 610 = 377 : true
- 1597 - 987 = 610 : true
- 2584 - 1597 = 987 : true
- 4181 - 2584 = 1597 : true
- 6765 - 4181 = 2584 : true
- 10946 - 6765 = 4181 : true
- 17711 - 10946 = 6765 : true
- 28657 - 17711 = 10946 : true
- 46368 - 28657 = 17711 : true
- 75025 - 46368 = 28657 : true
- 121393 - 75025 = 46368 : true
- 196418 - 121393 = 75025 : true

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
```

```
            display: flex;
            flex-direction: column;
            align-items: center;
        }
        .row {
            display: flex;
        }
        .block {
            width: 50px;
            height: 50px;
            display: flex;
            justify-content: center;
            align-items: center;
            border: 1px solid #000;
            margin: 2px;
            position: relative;
        }
        .strikethrough {
            position: absolute;
            top: 50%;
            left: 0;
            width: 100%;
            height: 2px;
        }
    </style>
</head>
<body>
    <center>
        <div class="container" id="pyramid"></div>
        <textarea id="textArea" rows="10" cols="50"></textarea>
    </center>
    <script>
        function fibonacci(n) {
            if (n <= 1) return n;
            return fibonacci(n - 1) + fibonacci(n - 2);
        }

        function createPyramid(levels) {
            const container = document.getElementById('pyramid');
            const textArea = document.getElementById('textArea');
            let fibIndex = 0;
            let sequence = [];
            const colors = ['red', 'blue', 'green', 'orange', 'purple', 'pink'];

            for (let i = 1; i <= levels; i++) {
                const row = document.createElement('div');
```

```
                    const block = document.createElement('div');
                    block.className = 'block';
                    const fibValue = fibonacci(fibIndex);
                    block.textContent = fibValue;

                    sequence.push(fibValue);
                    if (fibIndex >= 2) {
                        const prev1 = sequence[fibIndex - 1];
                        const prev2 = sequence[fibIndex - 2];
                        const subtractValue = fibValue - prev1;
                        const correctSolution = subtractValue === prev2;
                        textArea.value += `${fibValue} - ${prev1} = ${subtractValue} : ${correctSo

                        const line = document.createElement('div');
                        line.className = 'strikethrough';
                        line.style.backgroundColor = colors[fibIndex % colors.length];
                        line.style.transform = 'rotate(0deg)';
                        block.appendChild(line);

                        const line2 = document.createElement('div');
                        line2.className = 'strikethrough';
                        line2.style.backgroundColor = colors[(fibIndex + 1) % colors.length];
                        line2.style.transform = 'rotate(30deg)';
                        block.appendChild(line2);

                        const line3 = document.createElement('div');
                        line3.className = 'strikethrough';
                        line3.style.backgroundColor = colors[(fibIndex + 2) % colors.length];
                        line3.style.transform = 'rotate(-30deg)';
                        block.appendChild(line3);
                    }

                    fibIndex++;
                    row.appendChild(block);
                }

                container.appendChild(row);
            }
        }

        createPyramid(7); // Change the number of levels here
    </script>
</body>
</html>
```