Using CSS math functions

CSS provides four mathematical expression functions: `calc()`, `min()`, `max()`, and `clamp()`. We'll take look at each one in some detail and we'll also talk about how we can use them in CSS variables.

calc()

The calc() function supports four arithmetic operations: addition (+), subtraction (-), multiplication (*) and division (/).

This will allow you to dynamically calculate the width and height of a container to create responsive layouts.

In this example, you can set the margins of an element minus a fixed amount:

```
div {
  width: calc(80vw - 20px);
}
```

min()

The min() function is used to set the smallest acceptable value for a rule.

It takes 2 different comma-separate values that offer the values the browser will choose from.

In this example the font-size will be 1vw unless the computer value of 1vw is smaller than 25px (I can only think of this happening in very large screens).

```
font-size: min(25px,1vw);
```

max()

The `max()` function takes two values, like the `min()` function, and uses the largest

of the two values.

In this example the font will be at least 25px and never larger than 1vw if the 1vw is larger than 25px.

```
font-size: max(25px,1vw);
```

clamp()

The `clamp()` function defines an acceptable range of various values for a layout element: minimum, preferred, and maximum.

The function takes three values separated by a comma and the values may be of different types.

- The first value representsthe minimum value. If the preferred value is less than this value, the minimum value will be used
- The second value represents the preferred value. The value will be used as long as it stays between the minimum and maximum values
- The third value represents the maximum allowed value. If the preferred value is larger than this value, this value will be used

It is, in essence, the combination of both `min()` and `max()` features where the value will never be smaller than the minimum value or larger than the maxium value.

In this example, the font-size will be 4vw + 1rem, as long as the calculated value based on the base font size of the page and the size of the viewport is no smaller than 1rem or larger than 4rem.

```
.example {
  font-size: clamp(
    1rem,
    4vw + 1rem,
    4rem
  );
}
```

CSS math functions can be used everywhere you can use a CSS length value. This gives us additional flexibility when it comes to dynamically sizing elements.