Changing font sizes in equations

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Probably a rare event, but there may be a time when you would prefer to have some control of the size. For example, using text-mode maths, by default a simple fraction will look like this: \( \frac{1}{2} \) where as you may prefer to have it displayed larger, like when in display mode, but still keeping it inline, like this: \( \frac{1}{2} \).

A simple approach is to utilise the predefined sizes for maths elements:

\begin{align*}
\text{\textstyle} & \text{Size for equations in text mode} \\
\text{\scriptstyle} & \text{Size for first sub/superscripts} \\
\text{\scriptscriptstyle} & \text{Size for subsequent sub/superscripts}
\end{align*}

A classic example to see this in use is typesetting continued fractions. The following code provides an example.

\begin{equation}
x = a_0 + \frac{1}{a_1 + \frac{1}{a_2 + \frac{1}{a_3 + a_4}}} \tag{1}
\end{equation}

As you can see, as the fractions continue, they get smaller (although they will not get any smaller as in this example, they have reached the \text{\scriptscriptstyle} limit. If you wanted to keep the size consistent, you could declare each fraction to use the display style instead, e.g.,

\begin{verbatim}
\begin{equation}
x = a_0 + \frac{1}{a_1 + \frac{1}{a_2 + \frac{1}{a_3 + a_4}}} \tag{2}
\end{equation}
\end{verbatim}