0.1 Text over and under symbols

0.1.1 Place text using overset & underset

```
\usepackage{amsmath} % align

begin{align}
    a \overset{why?}{=} b \\
    a \underset{why?}{=} b
    \end{align}
```

$$a \stackrel{why?}{=} b \tag{1}$$

$$a = b \tag{2}$$

0.1.2 Remove extra spaces with mathclap

```
1 \usepackage{amsmath} % align
2 \usepackage{mathtools} % mathclap
3
4 \begin{align}
5 a \overset{
6 \mathclap{why?}
7 }{=} b \\
8 a \underset{
9 \mathclap{why?}
10 }{=} b
11 \end{align}
```

$$\begin{array}{l}
 a = b \\
 \end{array} \tag{3}$$

$$\begin{array}{l}
a = b \\
why?
\end{array} \tag{4}$$

0.1.3 Multiple lines with substack

```
\usepackage{amsmath} % align, substack
\usepackage{mathtools} % mathclap

begin{align}
a \overset{
mathclap{
```

```
\sl_substack{}
7
      why? \\
             how?
9
           }
10
        }
11
      }{=} b \\
12
      a \underset{
13
        \mathclap{
14
           15
      why? \\
16
             how?
17
           }
18
        }
19
      }{=} b
20
    \ensuremath{\mbox{end}\{\mbox{align}\}}
```

0.1.4 Place arrows

```
\usepackage{amsmath} % align, substack
   \usepackage{mathtools} % mathclap
   \begin{align}
     a \overset{
       \mathclap{
6
         why?
              11
     how?
              11
9
           \downarrow
10
11
       }
12
     }{=} b \\
13
     a \underset{
14
       \mathclap{
15
         \substack{
16
     \uparrow \\
17
     why?
              11
18
           how?
         }
20
       }
```

```
22 }{=} b
23 \end{align}
```

why?
how?
$$a \stackrel{\downarrow}{=} b \tag{7}$$

$$a = b$$

$$\uparrow$$
why?
how?

0.1.5 Use long arrows with \backslash big

```
\verb|\usepackage{amsmath}| \ \% \ align, \ substack
   \usepackage{mathtools} % mathclap
2
3
   \begin{align}
     a \overset{
5
       \mathclap{
6
         why?
               11
     how?
               //
           \big \downarrow
10
         }
       }
12
     }{=} b
             - \ \
13
     a \underset{
14
       \mathclap{
15
         16
     \big \uparrow \\
17
     why?
              //
18
           how?
19
         }
20
       }
21
     }{=} b
22
   \end{align}
```

$$\begin{array}{c}
 why? \\
how? \\
 a \stackrel{\downarrow}{=} b
\end{array} \qquad (9)$$

$$\begin{array}{c}
 a = b \\
 \uparrow \\
 why? \\
 how?
\end{array}$$