

0.1 Text over and under symbols

0.1.1 Place text using overset & underset

```
1 \usepackage{amsmath} % align
2
3 \begin{align}
4   a \overset{why?}{=} b \\\
5   a \underset{why?}{=} b
6 \end{align}
```

$$a \overset{why?}{=} b \quad (1)$$

$$a \underset{why?}{=} b \quad (2)$$

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}
```

$$a \overset{why?}{=} b \quad (3)$$

$$a \underset{why?}{=} b \quad (4)$$

0.1.3 Multiple lines with substack

```
1 \usepackage{amsmath} % align, substack
2 \usepackage{mathtools} % mathclap
3
4 \begin{align}
5   a \overset{
6     \mathclap{
7       \substack{
8         why? \\\
9         how?
10      }
11     }
12 }{=} b \\\
13   a \underset{
14     \mathclap{
15       \substack{
16         why? \\\
17         how?
18      }
19     }
20 }{=} b
21 \end{align}
```

$$\begin{array}{c} \text{why?} \\ \text{how?} \\ a \equiv b \end{array} \quad (5)$$

$$\begin{array}{c} a = b \\ \text{why?} \\ \text{how?} \end{array} \quad (6)$$

0.1.4 Place arrows

```

1 \usepackage{amsmath} % align, substack
2 \usepackage{mathtools} % mathclap
3
4 \begin{align}
5   a \overset{
6     \mathclap{
7       \substack{
8         \text{why?} \quad \backslash\backslash
9         \text{how?} \quad \backslash\backslash
10        \downarrow
11      }
12    }
13  }{=} b \quad \backslash\backslash
14   a \underset{
15     \mathclap{
16       \substack{
17         \uparrow \quad \backslash\backslash
18         \text{why?} \quad \backslash\backslash
19         \text{how?}
20       }
21     }
22  }{=} b
23 \end{align}

```

$$\begin{array}{c} \text{why?} \\ \text{how?} \\ \downarrow \\ a \equiv b \end{array} \quad (7)$$

$$\begin{array}{c} a = b \\ \uparrow \\ \text{why?} \\ \text{how?} \end{array} \quad (8)$$

0.1.5 Use long arrows with `\big`

```

1 \usepackage{amsmath} % align, substack
2 \usepackage{mathtools} % mathclap
3
4 \begin{align}
5   a \overset{
6     \mathclap{
7       \substack{
8         \text{why?} \quad \backslash\backslash
9         \text{how?} \quad \backslash\backslash
10        \big \downarrow
11      }
12    }
13  }{=} b \quad \backslash\backslash
14   a \underset{
15     \mathclap{
16       \substack{
17         \big \uparrow \quad \backslash\backslash
18         \text{why?} \quad \backslash\backslash
19         \text{how?}
20       }
21     }
22  }{=} b
23 \end{align}

```

```
20      }
21    }
22    }{=} b
23 \end{align}
```

$$\begin{array}{c} \textit{why?} \\ \textit{how?} \\ \downarrow \\ a \equiv b \end{array}$$

(9)

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

(10)