You can put inline math in with blackslash-parenthesis, then math, then blackslash-parenthesis, like this: $\psi + \phi$.

For longer series you can use align (add an asterisk to remove automatic numbering of equations) and the & sign (saying where you want the alignment to happen, e.g., the equals sign or such):

$$x_i = y + g^{\theta}$$
: basic fun (1)

$$s_i = x + i \tag{2}$$

Handy websites:

Latex Wikibooks: Math

Latex Wikibooks: Advanced Math Draw your symbol in order to find it!

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Chesson 2003, Eqn 1

$$N_j(t+1) = (1 - d_j)N_j + R_t N_j$$

 d_j is per capita death of persistent stage (for us, seeds) R_j is per capita number of new recruits

Equivalents in our model (from Chesson 2004)