{m}

```
m                          rows (X)          rows (y)
size (X, 1)                length (y)        size (y, 1)
length (x (:, 1))          length (X)        size (X) (1)
```

{alphaOverM}

```
alpha / {m}                1 * alpha / {m}       alpha .* 1 / {m}
1 / {m} * alpha            alpha .* (1 / {m})    alpha ./ {m}
alpha * inv ({m})          alpha * pinv ({m})    1 .* alpha ./ {m}
alpha * (1 ./ {m})         alpha * 1 ./ {m}      alpha * (1 / {m})
.01 / {m}                  alpha .* (1 ./ {m})   alpha * {m} ^ -1
```

{hypothesis}

```
(X * theta)
(theta' * X')'
[X] * theta
(X * theta (:))
theta(1) + theta (2) * X (:, 2)
                ⋮
sum(X.*repmat(theta',{m},1), 2)
```

{residual}

```
(X * theta - y)
(theta' * X' - y')'
({hypothesis} - y)
({hypothesis}' - y')'
[{hypothesis} - y]
              ⋮
sum({hypothesis} - y, 2)
```