Area between curves

\[ \int_{a}^{b} [f(x) - g(x)] \, dx \]

upper curve  lower curve
\[ \frac{\theta x}{y} \]

Find the area of the shaded region.
Area between curves.

\[ \int_c^d [f(y) - g(y)] \, dy \]

right most \quad left most
Find the area of the shaded region.

\[
\int_0^1 [\text{right most} - \text{left most}] \, dy
\]
Find the area of the shaded region.

\[
\int_0^1 \left[ y^2 - y^3 \right] \, dy
\]

\[
= \left[ \frac{y^3}{3} - \frac{y^4}{4} \right]_0^1
\]

\[
= \frac{1}{3} - \frac{1}{4}
\]

\[
= \frac{4}{12} - \frac{3}{12}
\]

\[
= \frac{1}{12} \text{ square units of area}
\]