# Formulas to remember

Sometimes, you just need to remember certain formulas or values to make your life easier. Here they are separated by category. Some formula’s I’ll consider universal, like

Which was originally proven for triangle sides, and is still largely founded in that premise, but has become infinitely more useful in other domains.

## Trigonometric formulas

Pythagorean identities:

Rearranging this formula also get’s you

Double angle identity:

Using the previous formula, in conjugation with the Pythagorean identity, we could derivate a very important formula for integration

Similar derivation get’s you:

You also got the very useful

There’s also it’s relation to complex number

Manipulating that expression, we get

some important angles to remember for sin and cosine arcsine, etc. you could use the hand rule. You also only need to really memorise sine and cosine, though the other values will be put just in case. Note that inverse functions are implicitly given to you through this table.

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Note that angle that are not present are rare appearances and have weird answers

Or simply cannot be expressed in terms of sums, products, and finite root extractions

You don’t need to know this, but only Fermat primes () have relatively easily representable values.

The polynomial expansion could be useful

HERE

Remember, that sine and cosine are directly related

A reminder that the reciprocal of functions has name

Don’t forget the hyperbolic functions and their relations

Try to remember all of this for tan, arctan, and tanh

## Derivatives/integrals

For now in EYTNKA derivatives, integrability