1. The degree of precision of the follwing quadrature rule is 1:

$$\int_{-1}^{1} f(x)\,\mathrm{d}x \approx 2f(0).$$

2. The closed Newton–Cotes rule with n points is exact for all polynomials of degree up to n.

3. The trapezium approximation is always wrong if f is not a polynomial. That is to say, for all non-polynomial function f, it holds that

$$\int_{-1}^{1} f(x)\,\mathrm{d}x \neq f(-1) + f(1).$$

4. The degree of precision of the following quadrature rule is 1:

$$\int_{-1}^{1} f(x)\,\mathrm{d}x \approx f(1).$$

5. Suppose that $f \in C^\infty[a,b]$ and let $I_n[f]$ denote the approximate integral of f using the composite trapezium rule with n integration points. Then it holds that

$$\lim_{n\to\infty} \Bigl|I[f] - I_n[f]\Bigr| = 0, \qquad I[f] := \int_a^b f(x)\,\mathrm{d}x.$$

6. Suppose that $f \in C^\infty[a,b]$ and let $I_n[f]$ denote the approximate integral of f using the composite trapezium rule with n integration points. Then there exists C such that

$$\forall n \in \{2,3,\dots\}, \qquad \Bigl|I[f] - I_n[f]\Bigr| \leq \frac{C}{n^2}.$$

7. Suppose that $f \in C^\infty[a,b]$ and let $I_n[f]$ denote the approximate integral of f using the composite trapezium rule with n integration points. Then it holds that

$$\lim_{n\to\infty} n^2 \Bigl|I[f] - I_n[f]\Bigr| = 0.$$

8. There exist w_1 and w_2 such that the degree of precision of the following rule is 2:

$$\int_{-1}^{1} f(x)\,\mathrm{d}x = w_1 f(0) + w_2 f(1).$$

9. In Julia, the following code implements the composite trapezium rule with $n+1$ points:

```julia
function I_approx(a, b, n)
    x = LinRange(a, b, n + 1)
    h = (b - a) / n
    return h*sum(f, x[1:n] .+ h/2)
end
```

10. In Julia, the following code implements the composite Simpson rule with $n+1$ points:

```julia
function I_approx(n)
    x = LinRange(a, b, n + 1)
    h = (b - a) / n
    result = 0.
    result += h/3 * f(x[1]) + h/3 * f(x[end])
    result += 4h/3 * sum(f, x[2:2:end-1])
    result += 2h/3 * sum(f, x[3:2:end-2])
    return result
end
```