1.

```
>_ Console  ×  +

                                    ◉ Show Only Latest  🗑 Clear Past Runs
  ⌄  python3 mai...          ⏏ Ask Assistant    345ms • Just now   ✓

Composite Trapezoidal Rule: 0.39614759
Composite Simpson's Rule:   0.38566360
Composite Midpoint Rule:    0.38080480
```

2.

```
>_ Console  ×  +

                                    ◉ Show Only Latest  🗑 Clear Past Runs
  ⌄  python3 mai...          ⏏ Ask Assistant    2s • Just now   ✓

Gaussian Quadrature n=3: 0.19225938
Gaussian Quadrature n=4: 0.19225936
Exact value (scipy.quad): 0.19225936
誤差 (n=3): 1.95e-08
誤差 (n=4): 7.21e-11
```

3.

```
>_ Console  ×  +

                                    ◉ Show Only Latest  🗑 Clear Past Runs
  ⌄  python3 mai...          ⏏ Ask Assistant    887ms • 2 minutes ɛ   ✓

Simpson's Rule: 0.51198754
Gaussian Quadrature: 0.51186554
Exact value (dblquad): 0.40411975
誤差 (Simpson): 1.08e-01
誤差 (Gaussian): 1.08e-01
```

4.

```
>_ Console  ×  +

                                    ◉ Show Only Latest  🗑 Clear Past Runs
  ⌄  python3 mai...          ⏏ Ask Assistant    290ms • Just now   ✓

(a) ∫₀¹ x^(-1/4) sin(x) dx ≈ 0.52593128
(b) ∫₁^∞ x^(-4) sin(x) dx ≈ 0.27448162
```