1C $I = \int_0^5 \frac{dx}{2-\sqrt{x}}$ observe singularity @ $x=4$

lets try intervals $0 \le x \le 3.999$ & $4.001 \le x \le 5$

$$\int_a^b f(x)dx \approx \frac{h}{3}\left[f(x_0) + 4f(x_1) + 2f(x_2) + \dots + f(x_n)\right]$$

coeffs → 1, 4, 2, 4, 2 ... 4, 2, 4, 1 → n+1 points

let $h = \frac{b-a}{n}$ where n is even

$h_1 = \frac{3.999-0}{4} = 0.99975$

$h_2 = \frac{5-4.001}{4} = 0.24975$

$$\int_0^{3.99} \frac{h}{3}(f(0) \dots f(3.99)) + \int_{4.001}^{5} \frac{h}{3}(f(4.001) \dots f(5))$$

$f(x_1)_1 = \frac{1}{2-\sqrt{0.99975}} \approx 0.999875$	$f(x_1)_2 = \frac{1}{2-\sqrt{.24975}} \approx 0.6665$
$f(x_2)_1 \approx 1.7066$	$f(x_2)_2 \approx 0.773$
$f(x_3)_1 = 3.729$	$f(x_3)_2 = 0.9815$
$f(x_4)_1 = 399.7498$	$f(x_4)_2 = 0.9995$

$$\frac{0.99975}{3}\left(\overset{f(x_0)}{0.5} + 4\overset{f(x_1)}{(0.999875)} + 2\overset{f(x_2)}{(1.7066)} + 4\overset{f(x_3)}{(3.729)} + \overset{f(x_4)}{399.7498}\right)$$

$$+ \frac{0.24975}{3}\left(-4000.25 + 4(0.6665) + 2(0.773) + 4(0.9815) + 0.995\right)$$

$209.98649 \pm |-448| \approx 658$