1.

```
\frac{1}{2}\int_{1}^{10} V(t)dt = \int_{1}^{2} V(t)dt + \int_{2}^{4} \int_{2}^{4} V(t)dt + \int_{3}^{6} \int_{3}^{4} V(t)d
```

2.

>> format short

>> x = linspace(0.78, 1, 7)

 $\mathbf{x} =$ 

1至5列

 $0.7800 \quad 0.8167 \quad 0.8533 \quad 0.8900 \quad 0.9267$ 

6至7列

```
0.9633 1.0000
```

$$\gg$$
 y = cos(x)./sqrt(1-x.^2)

y =

1至5列

1.1360 1.1864 1.2611 1.3804 1.5976

6至7列

2.1274 Inf

>> format long

$$>> h = (1-0.78)/6$$

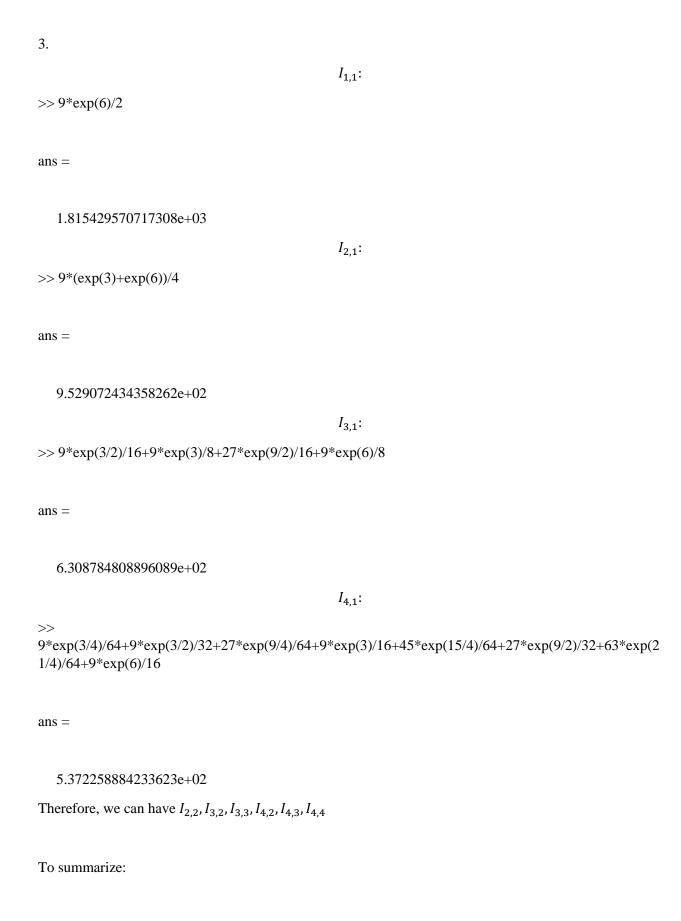
h =

0.036666666666667

$$>> 6*h/20*(11*y(2) - 14*y(3) + 26*y(4) - 14*y(5) + 11*y(6))$$

ans =

0.355525685422171



1815.429571

952.907243 665.399800

630.878481 523.535560 514.399800

537.225888 506.008357 504.839876 504.69324

The true value is 504.5306

Et = |504.5306 - 504.69324|/|504.5306| = 0.000312 = 0.0312%

Ea = |504.69324 - 514.399800| / |504.69324| = 0.0192 = 1.92%

4.

4 
$$f(x_0+2h) = f(x_0) + 2hf'(x_0) + \frac{4h^2}{5}f''(x_0) + \frac{5h^2}{6}f'''(x_0) + \frac{18h^4}{24}f''(x_0)$$
 $+ \frac{2h^2}{100}f'''(x_0) + 0(h^6)$ 
 $+ (x_0+h) = f(x_0) + hf'(x_0) + \frac{h^2}{5}f''(x_0) + \frac{h^2}{6}f''(x_0) + \frac{h^2}{100}f'(x_0) + \frac{h^2}{$