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PS C:\Users\TUF> & C:/Users/TUF/AppData/Local/Programs/Python/Python310/python
.exe c:/Users/TUF/Desktop/數值作業5.py
```

題目 1a : Euler 方法 (h = 0.1)

```
1a -> t=1.0, y=0.000000
1a -> t=1.1, y=0.100000
1a -> t=1.2, y=0.209917
1a -> t=1.3, y=0.330471
1a -> t=1.4, y=0.462354
1a -> t=1.5, y=0.606285
1a -> t=1.6, y=0.763041
1a -> t=1.7, y=0.933475
1a -> t=1.8, y=1.118537
1a -> t=1.9, y=1.319293
1a -> t=2.0, y=1.536943
```

題目 1b : Taylor 二階法 (h = 0.1)

```
1b -> t=1.0, y=0.000000
1b -> t=1.1, y=0.105000
1b -> t=1.2, y=0.220345
1b -> t=1.3, y=0.346673
1b -> t=1.4, y=0.484612
1b -> t=1.5, y=0.634819
1b -> t=1.6, y=0.798004
1b -> t=1.7, y=0.974951
1b -> t=1.8, y=1.166530
1b -> t=1.9, y=1.373715
1b -> t=2.0, y=1.597597
```

題目 2 : Runge-Kutta 方法 (h = 0.05)

```
2 -> h=0.05 t=0.00 u1=1.333333 u2=0.666667
2 -> h=0.05 t=0.05 u1=1.721880 u2=-0.499599
2 -> h=0.05 t=0.10 u1=1.726915 u2=-0.832598
2 -> h=0.05 t=0.15 u1=1.617161 u2=-0.890373
2 -> h=0.05 t=0.20 u1=1.481687 u2=-0.861042
2 -> h=0.05 t=0.25 u1=1.348945 u2=-0.807505
2 -> h=0.05 t=0.30 u1=1.227063 u2=-0.750341
2 -> h=0.05 t=0.35 u1=1.117478 u2=-0.695886
2 -> h=0.05 t=0.40 u1=1.019525 u2=-0.645732
2 -> h=0.05 t=0.45 u1=0.931977 u2=-0.599934
2 -> h=0.05 t=0.50 u1=0.853541 u2=-0.558092
2 -> h=0.05 t=0.55 u1=0.783017 u2=-0.519706
2 -> h=0.05 t=0.60 u1=0.719337 u2=-0.484290
2 -> h=0.05 t=0.65 u1=0.661560 u2=-0.451407
2 -> h=0.05 t=0.70 u1=0.608868 u2=-0.420673
2 -> h=0.05 t=0.75 u1=0.560547 u2=-0.391754
2 -> h=0.05 t=0.80 u1=0.515980 u2=-0.364365
2 -> h=0.05 t=0.85 u1=0.474633 u2=-0.338259
2 -> h=0.05 t=0.90 u1=0.436043 u2=-0.313226
2 -> h=0.05 t=0.95 u1=0.399812 u2=-0.289089
2 -> h=0.05 t=1.00 u1=0.365600 u2=-0.265698
```

題目 2 : Runge-Kutta 方法 (h = 0.10)

```
2 -> h=0.10 t=0.00 u1=1.333333 u2=0.666667
2 -> h=0.10 t=0.10 u1=-3.052437 u2=8.989305
2 -> h=0.10 t=0.20 u1=-23.847795 u2=51.192704
2 -> h=0.10 t=0.30 u1=-130.165202 u2=269.269193
2 -> h=0.10 t=0.40 u1=-680.221485 u2=1399.368584
2 -> h=0.10 t=0.50 u1=-3531.299585 u2=7258.241839
2 -> h=0.10 t=0.60 u1=-18312.795052 u2=37634.955483
2 -> h=0.10 t=0.70 u1=-94951.331907 u2=195131.871735
2 -> h=0.10 t=0.80 u1=-492306.465639 u2=1011721.872078
2 -> h=0.10 t=0.90 u1=-2552513.623867 u2=5245578.826590
2 -> h=0.10 t=1.00 u1=-13234278.789168 u2=27197287.206587
```

```
PS C:\Users\TUF>
```