Solution 23.14

(a) Create the M-file function:

```
function y=fn(x)
y=1/sqrt(2*pi)*exp(-(x.^2)/2);
```

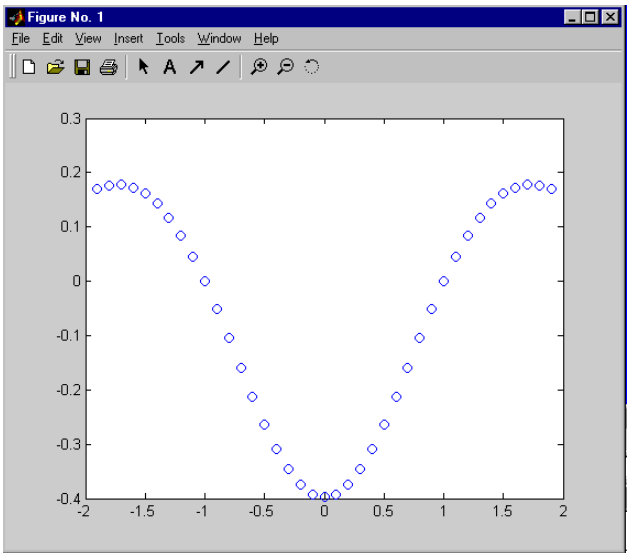
Then implement the following MATLAB session:

```
>> x=-2:.1:2;
>> y=fn(x);
>> Q=quad(@fn,-1,1)
Q =
    0.6827
>> Q=quad(@fn,-2,2)
Q =
    0.9545
```

Thus, about 68.3% of the area under the curve falls between –1 and 1 and about 95.45% falls between –2 and 2.

(b)

```
>> x=-2:.1:2;
>> y=fn(x);
>> d=diff(y)./diff(x);
>> x=-1.95:.1:1.95;
>> d2=diff(d)./diff(x);
>> x=-1.9:.1:1.9;
>> plot(x,d2,'o')
```



Thus, inflection points ($d^2y/dx^2 = 0$) occur at –1 and 1.