Var = $\frac{\sum (x-\mu)^2}{n}$

$= (SD)^2 = \sigma^2$

Central Tendency Assignment

1(a) $\frac{9+7+11+13+2+4+5+5}{8} = \boxed{7}$ Mean

Median — 2, 4, 5, 5, 7, 9, 13, 13

$\frac{8}{2} = 4^{th} = 5$ $\quad \frac{8+1}{2} = 4.5^{th} = 5^{th} = 7$

$\frac{5+7}{2} = \boxed{6}$

Mode $= \boxed{5}$

(2)

```
S=0
for i in range(1,11)
    S = S+i
MEAN = S/10
```

1(b)

2.2 + 10.2 + 14.7 + 5.9 + 4.9 + 11.1 + 10.5

Mean = 8.5

Median = 10.2

Mode = 2.2 randomly given as unique value present in list.

1(c)

$\frac{5}{4}, \frac{5}{2}, \frac{11}{2}, \frac{13}{4}, \frac{5}{2}$

Mean = 3.0

Median = 2.5

Mode = 5/2

(3) [1, 3, 5, 7, 11]

Mean = 5.4

Median = 5.0

(4) 8, 11, 6, 14, x, 13

$$66 = \frac{x + 52}{6} =$$

$$x = 344$$

(5) 6, 8, $x+2$, 10, $2x-1$, 2

$$9 = \frac{27 + 3x}{6}$$

$$x = 9$$

6, 8, 11, 10, 17, 2

Spread = 17 − 2 = 15

(6) (a)
$$\frac{12\times5 + 10\times3 + 15\times2 + 14\times6 + 8\times4}{20}$$

$$= 11.8$$

(b)
$$\frac{25\times8 + 30\times12 + 15\times10 + 20\times6 + 24\times4}{40}$$

$$= 23.15$$

(7) (a) Mode = 8

(b) Mode = 17

(c) Mode = 3

(d) Mode = 1 } unique occurrence of all numbers.

(8)

$17, x, 24, x+7, 35, 36, 46$

$$\text{Mean} = \frac{165+x}{7}$$

Median = 25 =

$x+7 = 25$

$\boxed{x = 18}$

(9) After arranging

$x = 25$ or $x+7 = 25$

↳ changing Median = 32

17, 25, 24, 32, 35, 36, 46 } Not possible

(10) (d) choosing color which is most common