1.

a) $\frac{9+7+11+13+2+4+5+5}{8}$

$\mu = \frac{56}{8} = 7$

b) $\frac{2.2+10.2+14.7+5.9+4.9+11.1+10.5}{7}$

$\mu = 8.5$

c) $11/4, 21/2, 51/2, 31/4, 21/2$

$\frac{11/4 + 21/2 + 51/2 + 31/4 + 21/2}{5}$

$\frac{2.75 + 10.5 + 25.5 + 7.75 + 10.5}{5}$

$\mu = 11.4$

*

3) Mean & Median of first 5 prime numbers

2, 3, 5, 7, 11

$$\mu = \frac{2+3+5+7+11}{5} = \frac{28}{5} = 5.6$$

$$\text{Median} = \frac{n+1}{2} = \frac{6}{2} = 3^{rd} \text{ number}$$

$$= 5$$

4*

8, 11, 6, 14, x, 13

$$\frac{8+11+6+14+x+13}{6} = 66$$

$$52 + x = 66 \times 6$$

$$x = 344$$

*

5)

$$\frac{6+8+(x+2)+10+(2x-1)+2}{6} = 9$$

$$26 + x + 2 + 2x - 1$$

$$3x + 27 = 54$$

$$3x = 27$$

$$x = 9$$

$$x + 2 = 9 + 2 = 11 \; ; \; 2(9) + 1 = 17$$

6) | Age in years | 12 | 10 | 15 | 14 | 8 |
|---|---|---|---|---|---|
| No. of boys | 5 | 3 | 2 | 6 | 4 |

$$\text{Mean} = \frac{(5\times12)+(3\times10)+(2\times15)+(6\times14)+(4\times8)}{5+3+2+6+4}$$

$$= \frac{60+30+30+84+32}{20}$$

$$= \frac{236}{20} = 11.8$$

b) $$\frac{(8\times25)+(12\times30)+(10\times15)+(6\times20)+(4\times24)}{40}$$

$$= \frac{200+360+150+120+96}{40}$$

$$= 23.15$$

7) Mode = 12, 8, 4, 8, 1, 8, 9, 11, 9, 10, 12, 8

8 is the Mode - frequency of 8 is 4.

b) 15, 12, 17, 19, 22, 17, 29, 24, 17, 15

17 is the Mode - frequency of 17 is 3

c) 0, 3, 2, 1, 3, 5, 4, 3, 42, 1, 2, 0

3 is Mode → frequency of 3 is 3

d) 1, 7, 2, 4, 5, 9, 8, 3

No mode for this list.

* 8) 17, x+24, x+7, 35, 36, 46

Median = 25

avg of $n/2$, $\frac{n+1}{2}$ Values — length is even

3, 4

$$\frac{x+7+35}{2} = 25$$

$$x + 42 = 50$$

$$x = 8$$

10* In (D) Mode is used to measure the most common color, Since color is categorical, whichever color is the favourite to the most number of students then that color is the most common color

9) 17, x+7, x+24, 35, 36, 46

to Calculate x, (either 3rd or 4th position should have x+7, x+24) or (both 3rd & 4th Values should be x+7, & x+24)

→ 17, x+7, x+24, 35, 36, 46

i) $\frac{x+24+35}{2} = 25$ (given Median = 25)

$x+59 = 50$

$x = -9$

→ ~~17, 38, 3~~ 17, x+24, x+7, 35, 36, 46

ii) $\frac{x+7+35}{2} = 25$

$x+42 = 50$

$x = 8$

→ 17, 35, x+7, x+24, 36, 46

iii) $\frac{x+7+x+24}{2} = 25$

$2x+31 = 50$

$2x = 19$

$x = 9.5$

→ ~~17~~,

iv) 17, 35, 36, x+7, x+24, 46

$\frac{36+x+7}{2} = 25$

$x+43 = 50$

$x = 7$

v) 17, 35, 36, x+24, x+7, 46

$\left(\frac{36+x+24}{2} = 25\right)$

$x+60 = 50$

$x = -10$

possible Values of $x = (-9, 8, 9.5, 7, -10)$.