

1. Assignment marks for 20 students: 6 7 5 7 7 8 7 6 9 7 4 10 6 8 8 9 5 6 4 8

- Mean = $\text{Sum}(6, 7, 5, 7, 7, 8, 7, 6, 9, 7, 4, 10, 6, 8, 8, 9, 5, 6, 4, 8) / 20 = 6.85$
- Median = 7
- Mode = 7
- Standard Deviation = $\sqrt{((6-6.85)^2 + (7-6.85)^2 + (5-6.85)^2 + (7-6.85)^2 + (7-6.85)^2 + (8-6.85)^2 + (7-6.85)^2 + (6-6.85)^2 + (9-6.85)^2 + (7-6.85)^2 + (4-6.85)^2 + (10-6.85)^2 + (6-6.85)^2 + (8-6.85)^2 + (8-6.85)^2 + (9-6.85)^2 + (5-6.85)^2 + (6-6.85)^2 + (4-6.85)^2 + (8-6.85)^2) / 20} = 1.59$

2. Number of daily calls for 31 days: 28, 122, 217, 130, 120, 86, 80, 90, 140, 120, 70, 40, 145, 113, 90, 68, 174, 194, 170, 100, 75, 104, 97, 75, 123, 100, 75, 104, 97, 75, 123, 100, 89, 120, 109

- Mean = $\text{Sum}(28, 122, 217, 130, 120, 86, 80, 90, 140, 120, 70, 40, 145, 113, 90, 68, 174, 194, 170, 100, 75, 104, 97, 75, 123, 100, 75, 104, 97, 75, 123, 100, 89, 120, 109) / 35 = 107.51$
- Median = 100
- Mode = 75
- Standard Deviation = $\sqrt{((28-107.51)^2 + (122-107.51)^2 + (217-107.51)^2 + (130-107.51)^2 + (120-107.51)^2 + (86-107.51)^2 + (80-107.51)^2 + (90-107.51)^2 + (140-107.51)^2 + (120-107.51)^2 + (70-107.51)^2 + (40-107.51)^2 + (145-107.51)^2 + (113-107.51)^2 + (90-107.51)^2 + (68-107.51)^2 + (174-107.51)^2 + (194-107.51)^2 + (170-107.51)^2 + (100-107.51)^2 + (75-107.51)^2 + (104-107.51)^2 + (97-107.51)^2 + (75-107.51)^2 + (123-107.51)^2 + (100-107.51)^2 + (75-107.51)^2 + (104-107.51)^2 + (97-107.51)^2 + (75-107.51)^2 + (123-107.51)^2 + (100-107.51)^2 + (89-107.51)^2 + (120-107.51)^2 + (109-107.51)^2) / 35} = 39.49$

3. Number of days gym attended: $x = 0, 1, 2, 3, 4, 5$

Probability of attending gym x number of week days: $f(x) = 0.09, 0.15, 0.40, 0.25, 0.10, 0.01$

- Mean no. of workouts in a week = $(0 \cdot 0.09) + (1 \cdot 0.15) + (2 \cdot 0.40) + (3 \cdot 0.25) + (4 \cdot 0.10) + (5 \cdot 0.01) = 2.15$
- Variance = $(0-2.15)^2 \cdot 0.09 + (1-2.15)^2 \cdot 0.15 + (2-2.15)^2 \cdot 0.40 + (3-2.15)^2 \cdot 0.25 + (4-2.15)^2 \cdot 0.10 + (5-2.15)^2 \cdot 0.01 = 1.2275$