

Part 1: Bar Graphs

1. February
2. September

$$3. \% \text{ increase} = \frac{\text{March} - \text{Feb}}{\text{Feb}} = \frac{3980 - 3210}{3210} = 0.2399 \times 100 \\ = 23.99\%$$

$$4. \% \text{ increase} = \frac{\text{Sept} - \text{Feb}}{\text{Feb}} = \frac{7020 - 3210}{3210} = 1.1869 \times 100 \\ = 118.69\%$$

Part 2: Circle Graphs

5. Saving

6. Healthcare

$$7. \begin{array}{l} 0.12 \rightarrow \$300 \\ 0.06 \rightarrow \end{array} \quad \frac{0.06 \times 300}{0.12} = \$150$$

$$8. \begin{array}{l} 0.21 \rightarrow \$525 \\ 0.23 \rightarrow \end{array} \quad \frac{0.23 \times 525}{0.21} = \$575$$

$$9. \begin{array}{l} 0.08 \rightarrow \$200 \\ 0.22 \rightarrow \end{array} \quad \frac{0.22 \times 200}{0.08} = \$550$$

Part 3: Measures of Center and Spread.

10. Mean = $\frac{26 + 38 + 18 + 18}{4} = 25$ hours

11. Median

18, 18, 26, 38

$$= \frac{18 + 26}{2} = 22 \text{ hours}$$

12. Mode = 18 hours

13. Range = Max - Min

$$= 38 - 18 = 20 \text{ hours}$$

14.

Data Item	Data Item - Mean	(Data Item - Mean) ²
26	26 - 25 = 1	1
38	38 - 25 = 13	169
18	18 - 25 = -7	49
18	18 - 25 = -7	49
Total		268

$$\sigma = \sqrt{\frac{1}{n} \sum (x_i - \mu)^2}$$

$$= \sqrt{\frac{1}{4} \times 268} = 8.19$$

Part 4: Normal Distribution or the 68 - 95 - 99.7 Rule

$$N = 100$$

$$\sigma = 15$$

15. $\mu + x\sigma = 100$

$$100 + 15x = 100$$

$$x = 0$$

$$\text{Percentage} = 50\%$$

$$16. \text{ Number of people} = 0.5 \times 250 \\ = 125 \text{ people}$$

$$17. P(85 \leq x \leq 115)$$

$$100 - 15x = 85 \\ x = 1$$

$$100 + 15x = 115 \\ x = 1$$

$$\text{Percentage} = 68\%$$

$$18. \text{ Number of people} = 0.68 \times 250 \\ = 170 \text{ people}$$

$$19. P(55 \leq x \leq 145)$$

$$100 - 15x = 55 \\ x = 3$$

$$100 + 15x = 145 \\ x = 3$$

$$\text{Percentage} = 99.7\%$$

$$20. \text{ Number of people} = 0.997 \times 250 \\ = 249.25 \text{ people}$$