

1. Ratio
2. Interval
3. Nominal
4. Ratio
5. Sample
6. Population
7. Sample
- 8.

- a) Mean: C
- b) Median: A
- c) Mode: B

- 9.
- a) Systematic
- b) Convenience
- c) Cluster
- d) Simple random sample
- e) Stratified

10. A

11. B

12. B

13. C

14. A

$$\sqrt{0.36} = 0.6$$

15. A

16. C

$$\frac{61 + 37}{102 + 61 + 37} = 0.49$$

17. A

$$0.2(10 + 11 + 12 + 13 + 14) = 12$$

18. D

$$\sigma^2 = n\pi(1 - \pi) = 3(0.20)(0.80) = 0.48$$

19. B

$$P(X = 1) = {}^8C_1(0.10)^1(0.90)^7 \approx 0.383$$

20. B

$$(0.5)^5 \approx 0.031$$

21. B

$$\mu \pm 2\sigma = 500 \pm 2(10) = [480, 520]$$

22. C

23. C

$$P(X < 860) = P\left(Z < \frac{860 - 1000}{50}\right) = \Phi(-2.8) = 1 - \Phi(2.8) = 1 - 0.9974 = 0.0026$$

24. B

$$\begin{aligned} P(54000 < X < 66000) &= P\left(\frac{54000 - 60000}{4000} < Z < \frac{66000 - 60000}{4000}\right) \\ &= \Phi(1.5) - \Phi(-1.5) = 2\Phi(1.5) - 1 = 2(0.9332) - 1 = 0.8664 \end{aligned}$$

25. A

$$\mu(\bar{X}) = 60000$$

$$\sigma(\bar{X}) = \frac{4000}{\sqrt{4}} = 2000$$

$$P(\bar{X} > 66000) = P\left(Z > \frac{66000 - 60000}{2000}\right) = 1 - \Phi(3) = 1 - 0.9987 = 0.0013$$