

Chapter 08 연습문제 정답

1.

- (a) 0.0582
- (b) 0.0066
- (c) 0.9591
- (d) 0.8764

2.

- (a) 16.01
- (b) 1.69

3.

- (a) 1.753
- (b) 2.131

4.

- (a) 7.46
- (b) $\frac{1}{4.95} \approx 0.202$

5.

- (a) 0.0030
- (b) 0.1056
- (c) 0.7612

6.

- (a) α
- (b) α

7.

- (a) 2.25
- (b) -2.56
- (c) 2.17
- (d) 2.05
- (e) 0.14
- (f) -1.57

8.

- (a) 111.8
- (b) 85.4
- (c) 103.8
- (d) 108.3

9.

- (a) 0.0287
- (b) 0.005
- (c) 약 81.63
- (d) 약 82.12

10.

- (a) 0.9772
- (b) 0.1574

11.

- (a) 0.9164
- (b) 0.0028

12. 3.707

13. $\chi_0 = 15.09, \chi_1 = 0.55$

14. 14.45

15.

- (a) $f(x) = \frac{1}{16} x^2 e^{-x/2}, \quad x > 0$
- (b) $\mu = 6, \sigma^2 = 12$
- (c) $1 - 5e^{-2} \approx 0.3233$
- (d) 약 0.1761

16.

- (a) $U \sim F(3, 6)$
- (b) $\mu = 1.5, \sigma^2 = 5.25$
- (c) 0.975
- (d) 0.099

17. $\mu_X = e^{0.5} \approx 1.6487, \sigma_X^2 \approx 4.670$

18.

- (a) $P(X \geq 12) \approx 0.0918$
- (b) 약 0.2484
- (c) 12.4675
- (d) 0.0985

19. 5,138개

20.

- (a) 0.0013
- (b) 0.9085
- (c) 0.9421

21.

- (a) 0.9004
- (b) 0.0026

22. $\mu = 60, \sigma = 5$

23. 약 0.025

24.

- (a) 0.0228
- (b) 0.9768

25. 0.7698

26.

- (a) 0.1564
- (b) 0.1587

27.

- (a) 0.7458
- (b) 0.7924
- (c) 0.6970

28. 0.0207

29.

(a) $S \sim N(1600, 130.2^2)$

(b) 0.1190

30.

(a) 평균 $p\mu_1 + (1-p)\mu_2$, 분산 $p^2\sigma_1^2 + (1-p)^2\sigma_2^2$ 인 정규분포

(b) $p = \frac{\sigma_2^2}{\sigma_1^2 + \sigma_2^2}$ 일 때, Y 의 분산 $\sigma_Y^2 = \frac{\sigma_1^2 \sigma_2^2}{\sigma_1^2 + \sigma_2^2}$ 이 최소

31. 0.84

32.

(a) 0.0139

(b) 0.0089

(c) 0.3745

33.

(a) 0.6554

(b) 0.4445

34.

(a) $N(0.7, 0.4444)$

(b) 약 0.9987

(c) 약 0.1539

35.

(a) 0.1222

(b) $e^{1.5325} = 4.6297$

36.

(a) $f_X(x) = \frac{1}{\sqrt{2\pi}} e^{-x^2/2}, -\infty < x < \infty$

(b) $f(y|x=1) = \frac{1}{\sqrt{(0.72)\pi}} \exp\left(-\frac{(y-0.8)^2}{0.72}\right), -\infty < y < \infty$