

CATapult Courseware

Module 4
Answer Key

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ANSWER KEY **CLASS EXERCISES – QUANTITATIVE ABILITY**

CHAPTER QA 4.1

1-a-1 b-0 c-6 d-7 e-6 f-5 g-1
 2-a-83 b-07 c-43 3-44 4-24 5-a-61 b-67 c-110111
 d-11 e-50 f-37 6-a-(122)₃ (17)₁₀ b-(122)₅ (37)₁₀ c-(122)₇ (65)₁₀
 d-(122)₉ (101)₁₀ e-(122)₁₁ (145)₁₀ f-(122)₁₆ (290)₁₀ 7-(FA)₁₆
 8-(401)₆ 9-(10110)₅ 10-(300)₁₀ 11-1325, 2D5 12-a-2
 b- -2 c- -2 d- $\frac{1}{2}$ e-2 f- $\frac{2}{3}$ g-0 h-7 i-3 j-15 k- $\frac{4}{3}$
 13-a-1.4 b--0.7
 c--0.3. $\log 0.5 = \log 5/10 = \log 5 - \log 10 = (\log 5) - 1$
 d--0.7. $\log 0.2 = \log (1/5) = -0.7$
 14-x = y^4 15-11 digits

Challengers

1-a-4 b-3 2-1 3-4 4-4 5-2

CHAPTER QA 4.2

1- The sets A, B, C and E are finite
 2 to 4- Refer to the Explanatory Answers
 5-a-40 b-21 c-10 d-11 e-10 6-a-68 b-54 c-14 d-12 e-10
 f-2 g-2 h-18 i-10 j-14 7-a-12 b-70 8-30 9-30 10-25
 11-30 12-a-225% b-90% 13-2 : 1 14-a-2 b-8 c-40
 d-64

Challengers

1-a-No b-225 c-2300 d- -1
 2-a-4 b-3 c-2 d-1 e-4

CHAPTER QA 4.3

The Fundamental Principle of Counting

a-12 b-10 c-300 d-20 e-16 f-9000 g-4500 h-2240 i-2296
 j-5¹⁰ k-25 l-625 m-6¹⁰

Selection and Arrangement of Distinct Objects: Basic Permutations and Combinations

a-8! b-6720 c-6720 d-56 e-30 f-210 g-5040 h-10800 i-60
 j-35 k-4200 l-3600 m-¹¹P₇ n-3 × ¹¹P₇ o-4 × ¹¹P₇ p-8!/2
 q-i-120 ii-120 iii-84 iv-36 v-90 vi-30 vii-151200
 viii-21600 r-188 s- $\frac{37a}{64}$

Distribution of Distinct Objects into Distinct Groups

$$a-5^8b-8^5 \quad c-26^5 \quad d-2^6P_5 \quad e-2^6P_5 + 2^6P_4 + 2^6P_3 + 2^6P_2 + 2^6P_1$$

Challengers

1-3 2-4 3-2 4-2 5-3

CHAPTER QA 4.4

$$\begin{aligned} &1-a-7! \times {}^8P_4 \quad b-8! \times 4! \quad c-10! \times 2! \quad d-2! \times 7! \times 4! \\ &2-3! \times 5! \times 4! \times 3! \quad 3-6! \times {}^7P_4 \quad 4-a-6! = 720 \quad b-\frac{5!}{2!} = 60 \quad c-\frac{11!}{3!2!2!2!} \\ &d-\frac{10!}{5!3!2!} \quad e-5 \times 26 \times 5 = 650 \quad f-9^5 \quad g-{}^5C_2 \times {}^{21}C_3 \times 5! \\ &h-21 \times 20 \times 24 \times 23 \times 22 \quad i-\frac{10!}{6!4!} \quad 5-12 \quad 6-234 \quad 7-217 \quad 8-2 \text{ ways} \\ &9-0 \text{ ways} \quad 10-265 \quad 11-{}^6C_1 = 6 \quad 12-{}^7C_2 = 21 \quad 13-{}^{14}C_4 \\ &14-{}^{54}C_4 \quad 15-{}^{23}C_3 \quad 16-{}^{25}C_5 \quad 17-{}^{27}C_7 \quad 18-{}^{56}C_{17} \\ &19-{}^{129}C_{39} \quad 20-{}^{349}C_{10} \quad 21-{}^{17}C_3 \quad 22-\frac{15!}{10!5!} \quad 23-84 \quad 24-210 \\ &25-120 \quad 26-329 \end{aligned}$$

Challengers

1-4 2-1 3-4 4-3 5-2 6-2 7-4 8-1 9-3

CHAPTER QA 4.5

$$\begin{aligned} &1-\frac{1}{202} \quad 2-10 \quad 3-18 \quad 4-48 \quad 5-12 \quad 6-a-4 \quad b-19 \quad c-249 \\ &7-\text{No. } 20!, 21!, \dots, 24! \text{ are divisible by } 10000 \text{ but not by } 1 \text{ lakh while } 25! \text{ is divisible by } 1000000 \\ &8-a-7 \quad b-20 \quad a^3b^3 \quad c-\text{Zero} \\ &9-a-m^{10} + 10m^9 + 45m^8 + \dots + 45m^2 + 10m + 1 \\ &b-a^{10} - 10a^9 + 45a^8 + \dots + 45a^2 - 10a + 1 \\ &c-32x^5 + 240x^4y + 720x^3y^2 + 1080x^2y^3 + 810xy^4 + 243y^5 \quad 10-a-760x^{18} \\ &b-x^4, x^3, x^2, x^1 \text{ and } x^0 \quad c-\text{Only } 1 \quad 11-a-01 \quad b-49 \quad 12-a-35 \quad b-15 \quad c-56 \\ &13-a-6 \quad b-120 \quad c-24 \quad d-8 \quad 14-a-2 \quad b-6 \quad c-4 \quad d-1 \quad e-1 \\ &f-2 \quad g-2 \quad 15-a-1 \quad b-8 \quad c-17 \quad d-17 \quad e-5 \end{aligned}$$

Challengers

1-4 2-a-84 b-61 3-13 4-a-3 b-2 c-6 d-1 e-3 f-0
g-7 5-a-1 b-4 6-1

CHAPTER QA 4.6

1-1/2 2-1/7 3-125/343 4-a-4,1/6 b-1, 3 or 5, 1/2
 c-2, 4 or 6, 1/2 d-2, 3 or 5, 1/2 e-4 or 6, 1/3 f-1, 2, 3, 4, 5 or 6, 1
 g-2, 3, 4, 5 or 6, 5/6 h-2, 3, 4, 5 or 6, 5/6 5-8/13
 6-a-0.25 b-0.1 c-0.35 d-0.05 7-a-5/26 b-10/26 = 5/13
 c-3/26 d-3/10 e-3/5 8-a-2/16 or 1/8 b-12/15 or 4/5
 9-a-3/100 b-3/50 c-1/25 10-a-3/95 b-6/95 c-3/95
 11-a-9/20 b-11/20 c-3/4 d-5/16 e-0 12-a-2/5 b-3/5
 c-3/4 d-1/4 e-1/20 13-a-3/55 b-18 /55 c-28/55 14-a-0.09
 b-0.01 c-0.64 d-0.05 e-0.15 15- $\frac{\pi}{4}$ 16-a-1/2 b-1/2 c-1
 d-3/4 17-1/63 18-1/9 19-5/48 20-2 : 61 21-a-5/12
 b-1/60 c-1/15 d-239/240

Challengers

1-4 2-2 3-3 4-1 5-a-1 b-4

CHAPTER QA 4.7

1-7000 m 2- $\frac{14!}{8!6!} = 3003$ 3-15 × 70 = 1050 4-200 5-1680 6-1953
 7- ${}^4C_3 \left(\frac{1}{2}\right)^3 \left(\frac{1}{2}\right)^1$ 8- ${}^{12}C_4 \left(\frac{1}{3}\right)^4 \left(\frac{2}{3}\right)^8$ 9- ${}^{50}C_{20} \left(\frac{1}{5}\right)^{20} \left(\frac{4}{5}\right)^{30}$ 10- ${}^{20}C_3 \left(\frac{1}{3}\right)^3 \left(\frac{2}{3}\right)^{17}$
 11- ${}^{10}C_3 \left(\frac{1}{3}\right)^3 \left(\frac{2}{3}\right)^7$ 12-a- 8C_2 b- ${}^8C_2 - {}^4C_2 + 1$ 13-a- 8C_3 b- ${}^8C_3 - {}^4C_3$
 14-1 15- $\frac{2}{9}$ 16- $\frac{4}{52} \times \frac{3}{51} \times \frac{2}{50}$ or ${}^4C_3 / {}^{52}C_3$ 17-a- $\left(\frac{1}{13}\right)^3$ b- $4^3 / {}^{52}P_3$
 18- $4^3 / {}^{52}P_3 \times 6$ 19-3

Challengers

1-4 2-2 3-4 4-1 5-3 6-4

ANSWER KEY

CLASS EXERCISES – Data Interpretation & Logical Reasoning

CHAPTER DI 4.1

1-3 2-1 3-a-105 b-15 4-a-20 b-100 c-35 d-115 5-3 6-10
 7-238-11 9-11 10-19 11-3 12-2

Challengers

1-17 2-21 3-800000 4-11

CHAPTER DI 4.2

1-1 2-4 3-4 4-2 5-4 6-1 7-3 8-4 9-3 10-1
 11-3 12-3 13-2 14-2 15-3 16-3 17-3 18-4 19-1

Challengers

1-1 2-1 3-2 4-4

CHAPTER LR 4.1

1-2 2-4 3-2 4-1 5-1 6-3 7-2 8-1 9-1 10-3
 11-1 12-2 13-4 14-5 15-11 16-3 17-1 18-2

Challengers

1-3 2-2 3-2 4-4

ANSWER KEY **CLASS EXERCISES – Verbal Ability**

VA 4.1

1-19-Refer to the Explanatory Answers

| | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|
| 20-2 | 21-1 | 22-2 | 23-3 | 24-3 | 25-3 | 26-4 | 27-3 | 28-4 | 29-4 |
| 30-2 | 31-3 | 32-4 | 33-1 | 34-4 | 35-2 | 36-4 | 37-4 | 38-4 | 39-4 |
| 40-1 | | | | | | | | | |

VA 4.2

| | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|
| 1-1 | 2-2 | 3-4 | 4-1 | 5-4 | 6-4 | 7-1 | 8-2 | 9-3 | 10-4 |
| 11-2 | 12-2 | 13-3 | 14-2 | 15-1 | 16-2 | 17-3 | 18-2 | 19-1 | 20-4 |
| 21-3 | 22-2 | 23-4 | 24-1 | 25-2 | | | | | |

VA 4.3

| | | | | | | | | | |
|------|------|------|------|------|------|------|------|-----|------|
| 1-1 | 2-1 | 3-2 | 4-2 | 5-3 | 6-3 | 7-3 | 8-3 | 9-4 | 10-3 |
| 11-1 | 12-4 | 13-2 | 14-4 | 15-2 | 16-3 | 17-1 | 18-2 | | |

VA 4.4

| | | | | | | | | | |
|------|------|------|------|------|-----|-----|-----|-----|------|
| 1-3 | 2-2 | 3-3 | 4-2 | 5-2 | 6-2 | 7-2 | 8-2 | 9-3 | 10-2 |
| 11-4 | 12-3 | 13-1 | 14-1 | 15-3 | | | | | |

ANSWER KEY

PRACTICE EXERCISES – QUANTITATIVE ABILITY

CHAPTER QA 4.1

| Practice Exercise 1 | | | | | | | | | |
|---------------------|------|------|------|--|-----------------------|-----------------------|----------------------|-----------------------|-----------------------|
| 1a-4 | b-9 | c-3 | d-9 | | 2a-(27) ₁₀ | b-(511) ₁₀ | c-(64) ₁₀ | d-(117) ₁₀ | e-(231) ₁₀ |
| 3-2 | 4-1 | 5-4 | 6-3 | | 7-4 | 8-3 | 9-2 | 10-3 | 11-1 |
| 13-1 | 14-5 | 15-8 | 16-4 | | 17-1 | 18-3 | 19-3 | 20-4 | 21-2 |
| | | | | | | | | | 22-3 |

| Practice Exercise 2 | | | | | | | | | |
|---------------------|------|------|------|--|------|------|------|------|------|
| 1-3 | 2-1 | 3-1 | 4-1 | | 5-3 | 6-2 | 7-1 | 8-3 | 9-4 |
| 11-1 | 12-2 | 13-2 | 14-4 | | 15-1 | 16-2 | 17-3 | 18-2 | 19-4 |
| 21-0 | | | | | | | | | 20-4 |

CHAPTER QA 4.2

| Practice Exercise 1 | | | | | | | | | |
|---------------------|------|------|------|--|------|------|------|------|-------|
| 1-3 | 2-3 | 3-4 | 4-2 | | 5-4 | 6-4 | 7-4 | 8-3 | 9-1 |
| 11-3 | 12-4 | 13-4 | 14-3 | | 15-1 | 16-1 | 17-3 | 18-4 | 19-15 |
| | | | | | | | | | 20-6 |

| Practice Exercise 2 | | | | | | | | | |
|---------------------|------|------|------|--|------|------|------|------|-------|
| 1-1 | 2-4 | 3-1 | 4-2 | | 5-2 | 6-4 | 7-2 | 8-3 | 9-3 |
| 11-1 | 12-1 | 13-1 | 14-4 | | 15-4 | 16-4 | 17-4 | 18-4 | 19-65 |
| | | | | | | | | | 20-10 |

CHAPTER QA 4.3

| Practice Exercise | | | | | | | | | |
|-------------------|------|------|------|--|------|------|------|------|----------|
| 1-4 | 2-1 | 3-3 | 4-3 | | 5-3 | 6-2 | 7-2 | 8-4 | 9-2 |
| 11-2 | 12-4 | 13-4 | 14-3 | | 15-1 | 16-3 | 17-1 | 18-3 | 19-14400 |
| | | | | | | | | | 20-38 |

CHAPTER QA 4.4

| Practice Exercise | | | | | | | | | |
|-------------------|------|--------|-------|--|-------|--------|--------|--------|--------|
| 1-2 | 2-4 | 3-1 | 4-1 | | 5-2 | 6-3 | 7-2 | 8-1 | 9-1 |
| 11-2 | 12-3 | 13-800 | 14-18 | | 15-45 | 16-360 | 17-144 | 18-200 | 19-185 |
| | | | | | | | | | 20-16 |

CHAPTER QA 4.5

| Practice Exercise 1 | | | | | | | | | |
|---------------------|-------|-------------------|-------------------|-----------------|------|------|------|------|--------|
| 1a-100 | b-99 | c- $^{100}C_{50}$ | (3) ⁵⁰ | a ⁵⁰ | | | | | |
| 2a-10 | b-1 | c-6 | d-1 | e-3 | f-5 | g-1 | h-1 | i-1 | j-10 |
| k-1 | l-10 | m-1 | | | | | | | |
| 3-1 | 4-1 | 5-4 | 6-2 | 7-2 | 8-4 | 9-2 | 10-4 | 11-2 | 12-315 |
| 13-760 | 14-99 | 15-36 | 16-1 | 17-1313 | 18-2 | 19-2 | 20-3 | 21-4 | 22-4 |

| Practice Exercise 2 | | | | | | | | | |
|---------------------|-------|-------|------|-------|------|-------|------|------|------|
| 1a-99 | b-01 | c-07 | d-25 | e-09 | | | | | |
| 2a-8 | b-8 | c-4 | | | | | | | |
| 3a-8 | b-6 | c-4 | | | | | | | |
| 4-4 | 5a-17 | 5b-25 | 6-4 | 7-4 | 8-2 | 9-1 | 10-2 | 11-1 | 12-2 |
| 13-3 | 14-1 | 15-5 | 16-1 | 17-28 | 18-0 | 19-75 | 20-6 | 21-8 | 22-4 |

CHAPTER QA 4.6

| Practice Exercise 1 | | | | | | | | | |
|---------------------|---------|--------|-------|---------|--------|------|------|------|------|
| 1-0.3 | 2-24/49 | 3-0.25 | 4-0.2 | 5-12/49 | 6-4/49 | 7-3 | 8-3 | 9-2 | 10-3 |
| 11-1 | 12-1 | 13-4 | 14-1 | 15-1 | 16-3 | 17-2 | 18-2 | 19-2 | 20-2 |
| 21-1 | | | | | | | | | |

| Practice Exercise 2 | | | | | | | | | |
|---------------------|-------|--------|---------|---------|---------|---------|------|------|------|
| 1 Case I: | a-3/5 | b-4/35 | c-16/35 | d-4/7 | e-2/5 | f-31/35 | | | |
| Case II: | a-3/5 | b-0 | c-24/35 | d-24/35 | e-14/25 | f-1 | | | |
| 2-7/36 | 3-2/9 | 4-5/12 | 5-1/6 | 6-1/12 | 7-5/6 | 8-1 | 9-4 | 10-1 | 11-3 |
| 12-3 | 13-4 | 14-1 | 15-2 | 16-4 | 17-4 | 18-3 | 19-1 | 20-1 | 21-4 |

CHAPTER QA 4.7

| Practice Exercise 1 | | | | | | | | | |
|---------------------|------|------|------|------|------|------|--------|-------|--------|
| 1-1 | 2-4 | 3-4 | 4-4 | 5-3 | 6-3 | 7-1 | 8-4 | 9-1 | 10-2 |
| 11-2 | 12-2 | 13-4 | 14-2 | 15-2 | 16-3 | 17-4 | 18-120 | 19-19 | 20-891 |

| Practice Exercise 2 | | | | | | | | | |
|---------------------|------|------|------|------|-------|-------|--------|------|------|
| 1-2 | 2-3 | 3-1 | 4-2 | 5-3 | 6-4 | 7-4 | 8-2 | 9-4 | 10-2 |
| 11-2 | 12-4 | 13-4 | 14-3 | 15-4 | 16-75 | 17-40 | 18-720 | 19-3 | 20-4 |

ANSWER KEY
PRACTICE EXERCISES
DATA INTERPRETATION & LOGICAL REASONING

CHAPTER DI 4.1

| Practice Exercise 1 | | | | | | | | | |
|---------------------|------|-------|------|-------|--------|------|-----|-----|-------|
| 1-3 | 2-2 | 3-1 | 4-4 | 5-2 | 6-2 | 7-3 | 8-1 | | 9-198 |
| 10-52 | 11-0 | 12-38 | 13-1 | 14-60 | 15-170 | 16-1 | | | |
| Practice Exercise 2 | | | | | | | | | |
| 1-1 | 2-2 | 3-3 | 4-4 | 5-2 | 6-3 | 7-2 | 8-1 | 9-3 | 10-4 |
| 11-2 | 12-3 | 13-4 | 14-2 | 15-2 | 16-2 | | | | |

CHAPTER DI 4.2

| Practice Exercise 1 | | | | | | | | | |
|---------------------|------|------|-------|-------|---------|---------|-----|-----|------|
| 1-2 | 2-3 | 3-4 | 4-4 | 5-2 | 6-1 | 7-2 | 8-2 | 9-3 | 10-2 |
| 11-4 | 12-1 | 13-2 | 14-3 | 15-1 | 16-2 | | | | |
| Practice Exercise 2 | | | | | | | | | |
| 1-3 | 2-4 | 3-3 | 4-2 | 5-36 | 6-14 | 7-28 | 8-7 | 9-2 | 10-1 |
| 11-1 | 12-3 | 13-2 | 14-50 | 15-40 | 16-2014 | 17-1060 | | | |

CHAPTER LR 4.1

| Practice Exercise 1 | | | | | | | | | |
|---------------------|------|---------|------|------|------|------|-----|-----|------|
| 1-1 | 2-3 | 3-2 | 4-2 | 5-4 | 6-3 | 7-4 | 8-1 | 9-6 | 10-6 |
| 11-2300 | | 12-2100 | 13-4 | 14-1 | 15-2 | 16-3 | | | |
| Practice Exercise 2 | | | | | | | | | |
| 1-4 | 2-1 | 3-3 | 4-1 | 5-4 | 6-1 | 7-4 | 8-2 | 9-2 | 10-4 |
| 11-3 | 12-4 | 13-2 | 14-4 | 15-2 | 16-3 | 17-3 | | | |
| Practice Exercise 3 | | | | | | | | | |
| 1-1 | 2-3 | 3-2 | 4-10 | 5-2 | 6-4 | 7-5 | 8-2 | 9-2 | 10-3 |
| 11-1 | 12-1 | 13-3 | 14-4 | 15-3 | 16-3 | | | | |

ANSWER KEY

PRACTICE EXERCISES – VERBAL ABILITY

CHAPTER VA 4.1

| Practice Exercise 1 | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|
| Q1-10: Refer to the Explanatory Answers. | | | | | | | | | |
| 11-4 | 12-4 | 13-4 | 14-3 | 15-4 | 16-2 | 17-1 | 18-3 | 19-1 | 20-2 |
| 21-4 | 22-1 | 23-2 | 24-1 | 25-4 | 26-2 | 27-1 | 28-2 | 29-3 | |

| Practice Exercise 2 | | | | | | | | | |
|---------------------|------|------|------|------|------|------|------|------|------|
| 1-4 | 2-4 | 3-2 | 4-4 | 5-2 | 6-2 | 7-4 | 8-1 | 9-1 | 10-4 |
| 11-3 | 12-1 | 13-4 | 14-1 | 15-3 | 16-4 | 17-2 | 18-4 | 19-3 | 20-2 |
| 21-4 | 22-4 | 23-1 | 24-4 | 25-3 | 26-1 | 27-4 | 28-1 | 29-3 | 30-4 |

| Practice Exercise 3 | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|
| 1-4 | 2-1 | 3-2 | 4-4 | 5-3 | 6-3 | 7-4 | 8-4 | 9-1 | 10-3 |
| 11-3 | 12-4 | 13-2 | 14-4 | 15-1 | 16-4 | 17-1 | 18-2 | 19-3 | 20-1 |
| Q21-30: Refer to the Explanatory Answers. | | | | | | | | | |
| 31-3 | 32-1 | 33-3 | 34-2 | 35-2 | 36-2 | 37-2 | 38-4 | 39-1 | 40-3 |

| Practice Exercise 4 | | | | | | | | | |
|---------------------|------|------|------|------|------|------|------|------|------|
| 1-2 | 2-3 | 3-3 | 4-3 | 5-1 | 6-1 | 7-1 | 8-2 | 9-4 | 10-1 |
| 11-3 | 12-4 | 13-2 | 14-2 | 15-4 | 16-3 | 17-2 | 18-1 | 19-2 | 20-4 |
| 21-3 | 22-1 | 23-2 | 24-4 | 25-2 | 26-4 | 27-3 | 28-2 | 29-1 | 30-3 |
| 31-1 | 32-2 | 33-1 | 34-4 | 35-4 | 36-1 | 37-1 | 38-1 | 39-2 | 40-3 |
| 41-1 | 42-1 | 43-3 | 44-2 | 45-2 | 46-3 | 47-3 | 48-2 | 49-4 | 50-4 |
| 51-3 | | | | | | | | | |

CHAPTER VA 4.2

| Practice Exercise 1 | | | | | | | | | |
|---------------------|------|------|------|------|------|------|------|------|------|
| 1-3 | 2-4 | 3-3 | 4-1 | 5-1 | 6-3 | 7-2 | 8-2 | 9-2 | 10-2 |
| 11-4 | 12-1 | 13-3 | 14-2 | 15-4 | 16-4 | 17-2 | 18-2 | 19-4 | 20-1 |
| 21-4 | 22-1 | 23-3 | 24-1 | 25-3 | | | | | |

| Practice Exercise 2 | | | | | | | | | |
|---------------------|------|------|------|------|------|------|------|------|------|
| 1-4 | 2-4 | 3-4 | 4-3 | 5-1 | 6-1 | 7-2 | 8-3 | 9-2 | 10-4 |
| 11-3 | 12-3 | 13-4 | 14-2 | 15-2 | 16-4 | 17-2 | 18-2 | 19-2 | 20-1 |
| 21-1 | 22-4 | 23-3 | 24-3 | | | | | | |

Practice Exercise 3

| | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|
| 1-2 | 2-3 | 3-1 | 4-2 | 5-2 | 6-4 | 7-1 | 8-2 | 9-3 | 10-4 |
| 11-4 | 12-3 | 13-2 | 14-1 | 15-2 | 16-1 | 17-4 | 18-3 | 19-4 | 20-3 |
| 21-3 | 22-2 | 23-4 | 24-2 | 25-2 | 26-1 | | | | |

CHAPTER VA 4.3

Practice Exercise

| | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|
| 1-4 | 2-4 | 3-3 | 4-3 | 5-2 | 6-3 | 7-1 | 8-1 | 9-1 | 10-4 |
| 11-1 | 12-3 | 13-2 | 14-4 | 15-3 | 16-2 | 17-1 | 18-3 | 19-3 | 20-1 |
| 21-3 | | | | | | | | | |

CHAPTER VA 4.4

Practice Exercise 1

| | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|
| 1-4 | 2-3 | 3-3 | 4-2 | 5-4 | 6-3 | 7-2 | 8-1 | 9-3 | 10-1 |
| 11-2 | 12-3 | 13-3 | 14-2 | 15-3 | 16-4 | 17-4 | 18-3 | 19-3 | 20-4 |

Practice Exercise 2

| | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|
| 1-3 | 2-1 | 3-3 | 4-2 | 5-3 | 6-1 | 7-1 | 8-4 | 9-1 | 10-1 |
| 11-4 | 12-3 | 13-3 | 14-2 | 15-1 | 16-2 | 17-1 | 18-3 | 19-4 | 20-1 |