

CATapult Courseware

Module 3
Answer Key

Published by IMS Learning Resources Pvt. Ltd. in the Year 2020

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ANSWER KEY **CLASS EXERCISES – QUANTITATIVE ABILITY**

CHAPTER QA 3.1

Class Exercise

1-a- $\angle h = 40^\circ$ (Explain vertically opposite angles) b- $\angle b = 125^\circ$ c- $\angle s = 145^\circ$
d-We don't know if $EF \parallel CD$; so $\angle q$ cannot be determined
e-Since $WX \parallel YZ$, $\angle d + \angle v = 180^\circ$ always
f-- $\angle r = 130^\circ$, each of $\angle m$ and $\angle t$ is 50° . So $\angle m + \angle t = 100^\circ$
2-Let us add another line MN parallel to PQ and RS . Now $\angle QTN = 20^\circ$ and $\angle NTS = 25^\circ$ so $\angle QTS = 45^\circ$
 $3-x + 2x + 3x + 4x + 5x = 360^\circ$. So $15x = 360^\circ$ or $x = 24^\circ$
4-a- $\angle LOM = 65^\circ$ b- $\angle OLN = 65^\circ$ c- $\angle POM = 130^\circ$ d- $\angle NOL = 90^\circ$
5-a-2 b-3 c-2 d-4 e-3 6-a-6 and $8 \rightarrow 10$ b-5 and $12 \rightarrow 13$
c-10 and $24 \rightarrow 26$ d-14 and $48 \rightarrow 50$ e-*39 and $52 \rightarrow 65$
f-*25 and $60 \rightarrow 65$ 7-a-2 b-1 c-2 d-4 e-1
8-a-40 and $41 \rightarrow 9$ b-50 and $48 \rightarrow 14$ c-36 and $39 \rightarrow 15$ d-45 and $51 \rightarrow 24$
9-i-Congruent – ASA test ii-Cannot be determined iii-Congruent – SAA test
iv-Similar - AA test v-Similar – SAS test vi-Congruent - SSS test
vii-Similar – SSS test viii-* Congruent - SAS test ix-* Similar – AA test
x-* Congruent – Hypotenuse-Side Test 10- $\frac{16}{9}$

Challengers

1-2 2-1 3-2 4-4 5-12

CHAPTER QA 3.2

Class Exercise

1-4 2-a-2 b-4 c-3 d-1 3-125° 4- $5\sqrt{3}$ 5-18 6- $4\sqrt{3}$ 7-7.785
8-l(QR) = 10 9-2 : 1 10- $12\sqrt{3}$ 11-a-84 sq. units b-30 sq. units
c-30 sq. units d-84 sq. units e-60 sq. units f-24 sq. units g-48 sq. units
12-a- $\triangle ABD = 12$ b- $\triangle AOB = 8$ c- $\triangle AOF = 4$ d- $\triangle AEF = 6$ e- $\triangle DEF = 6$
f- $\triangle AED = 6$ g- $\triangle EOF = 2$ h- $\diamond AEOF = 8$ 13-50 sq.units 14- $10\sqrt{2}$
15-1-4.8 2-4 respectively 16-8.5 cm 17- $\sqrt{2} + 1$ 18-1-125°
2-115° 3-115° 19-110 20-4 sq.units.

Challengers

1-3 2-64 3-2 4-2 5-2

CHAPTER QA 3.3

Class Exercise

Quadrilaterals and polygons

1-a-True b-False c-False d-True e-False f-False g-False h-True
 i-True j-True k-False l-False m-False n-True o-True p-True q-True
 2-Hence PQRS will be a rectangle 3-a- 900° b- 360° 4-n = 10 5-z = 135°
 6- $54\sqrt{3} \text{ cm}^2$ 7- 180° 8-a-24 cm b-8 cm c- $4\sqrt{3} \text{ cm}$ d- $24\sqrt{3} \text{ cm}^2$
 9-n = 18 10-a-ACE Equilateral Triangle b-ACDF Rectangle c-AQDT Rhombus
 d-BOF Isosceles Triangle e-ABEF Isosceles Trapezium f-ACF Right Triangle
 g-PQRSTU Regular hexagon h-APDS Parallelogram i-AUP Equilateral Triangle
 j-ABDF Kite 11-a-2 b-3 c-6 d-24 e-4 f-9
 12-90 sq units

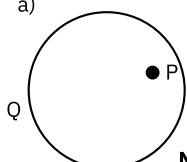
Challengers

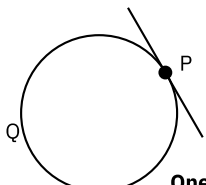
1-2 2-4 3-3 4-1

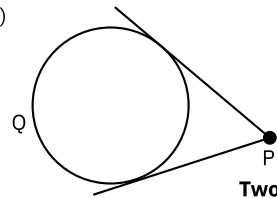
CHAPTER QA 3.4

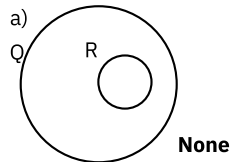
Class Exercise

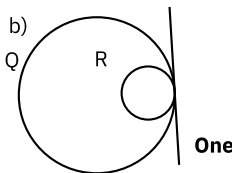
1- $\approx 628 \text{ m}$ 2-y = 80 3-a- $\approx 22 \text{ cm}$ b- $\approx 38.5 \text{ cm}^2$ c- $\approx 3.66 \text{ cm}$
 d- $\approx 6.42 \text{ cm}^2$ e- $\approx 1.15 \text{ cm}^2$ 4-50 cm 5-a-16 b-8 c- 120° d- $10\sqrt{2}$
 6-1-63 2-60 3-56 4-52 5-16 7-8

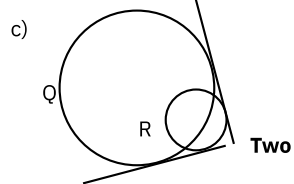
8- a)  None

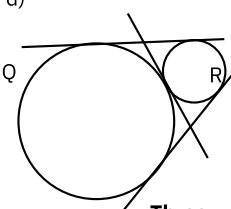
b)  One

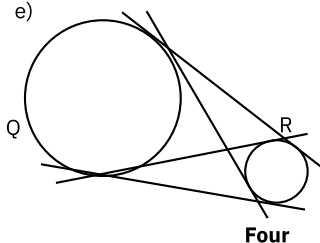
c)  Two

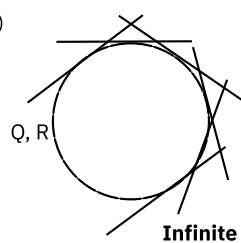
9- a)  None

b)  One

c)  Two

d)  Three

e)  Four

f)  Infinite

10-a-7 b-13 c-90° d-60° e-120° 11-1 12-Hence $x = \sqrt{d^2 - (R - r)^2}$
 13-Hence, $x = \sqrt{d^2 - (R + r)^2}$ 14-a-45 b-6 $\sqrt{6}$ c-The required ratio will be 1 : 1
 d-4 15- $\frac{36}{7}$ 16-84° 17-30 18-6 19-9.6 cm 20-140 21-75°

Challengers

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

6-Since the hexagon is a regular hexagon, the triangle is an equilateral triangle. The inner circle is the incircle of the triangle and the outer circle is the circumcircle of the triangle. The radius of the circumcircle of an equilateral triangle is twice that of its inradius. Therefore, the area of the larger circle is four times that of the inner circle.

CHAPTER QA 3.5

Class Exercise

1-80° 2-130° 3-15° 4-2 : 1 5-10 6-a-36° b-108° c-72° d-54° e-90°
 f-90° (Tangent perpendicular to radius) g-36° h-126° i-18° j-54° 7-a 10° b-40°
 c-36° 8-2 9-4 10-3 11-546 12-1 13-1 14-1 15-8 π sq cm
 16-25 π sq cm 17-4 π sq cm 18- $\frac{1}{4}$ 19-4 20- $\frac{16}{9}$ 21-2 + $\sqrt{3}$

Challengers

1-3 2-2 3-1 4-3 5-a- \angle CJD = 60° b- \angle JBK = 60°
 c- \angle JDK = 30° d- \angle IJK = 90° e- \angle JIK = 45° f- \angle AJB = 150°
 g-l(EJ) = $1 - \frac{\sqrt{3}}{2}$ h-l(IK) = $\sqrt{3} - 1$ 6-l(PQ) = 7

CHAPTER QA 3.6

Class Exercise

1-a-10 $\sqrt{3}$ cm³ b-2 $\sqrt{3} + 60$ cm³ 2-a-7040 cm³ b- \approx 43.3 cm c-55 cm
 3-a-80 inch³ b-42 rupees 4-a-48000 m³ b-27750 m³ 5-a-8 litres
 b-27 litres c-152 litres d-189 litres 6-Hence the seller is lying 7- $\frac{1}{6\sqrt{2}}$ cm²
 8-a-7 b-1 : 1 c-4 : 3 9-a-19.25 cm³ b-125 : 91 c-3.5 cm
 d-5 cm 10-1008 m³ 11-27 - 0.75 π 12-a- $\frac{5}{3}\pi r^2 \ell$ b- $2\pi r \ell + 2\pi r \sqrt{r^2 + \ell^2}$
 13-a-36 π cm³ b-4 $\sqrt{3}$ π cm³ 14-192 $\sqrt{3}$ sq.cm b-512 sq.cm 15-44 sq cm
 16-1056 paise

Challengers

1-a-64 b-increase of 243% 2-43-5 $\sqrt{5}$ units 4-2 5-1

CHAPTER QA 3.7

Class Exercise

- 1-7 km 2-21 minutes 3-80 m 4-6:35 a.m. 5-36 kmph, 30 kmph
 6-3 kmph 7-24 kmph 8-19.8 kmph 9-0.84 kmph 10-7/3 km
 11-10/9 m 12-4.8 kmph 13-112 min 14-50 min 15-11:30 a.m.
 16-1:30 p.m.
 17-In 1 hour they move 12 km towards each other so in ten minutes they will move 2 km
 18-Vicky has to catch up a distance of 30 m at 2 m/s hence 15 seconds
 19-Total distance is $12 + x$ at a speed of $(20 - 15) = 5$ m/s for 3 seconds. Hence $x = 3$ m
 20-33.33% 21-9 : 7 22-3 m/s 23-7 seconds 24-a-18 sec
 b-28 sec c-48 sec d-18 sec 25-a-380 / 35 \approx 10.85 sec b-Not possible
 c-380 / 5 = 76 sec d-96 seconds after 10 a.m. i.e. 10:01:36 a.m.
 26-a-Downstream speed = 20, hence upstream = 16, hence 5 hours
 b-20 - 18 = 2 kmph c-10 Hours d-30 hours e-14 kmph 27-50 m/s
 28-5 seconds

Challengers

- 1-1 2-1 3-4 4-10

CHAPTER QA 3.8

Class Exercise

- 1-8 days and 8 hours 2-21 minutes 3-So, originally there are 40 workers
 4-4 days 5-6 : 5 : 4 . So they will get Rs.1800, Rs.1500 and Rs.1200 respectively.
 6-a-2 h 40 min b-So the work will be completed at 12 pm.
 7-a-1 h 20 min b-6h 40min 8-a-4 hours to build a snowman.
 b-12:1. So while Calvin and Hobbes together make 24 snowmen, Susie alone will make 2 snowmen.
 9-So the tank will be empty in 60 minutes, i.e. 1 hour 10-36 minutes in all.
 11-Therefore pipe R needs to be opened by 9.53 a.m. or 4 minutes after pipe Q is opened.
 12-4 hours or the cistern will be emptied by 12 pm.
 13- $\frac{115}{9}$ days to complete the remaining work.
 14-So 16 workers were left, i.e. 4 workers left after 16 days. 15-So 8 boys should join.
 16-20 days. 17-7 : 3

Challengers

- 1-So the men must have left after 25 days. 2-So the tank will be full in 6 h 45 min
 3-10 4-40.5 hours. 5-30 days

CHAPTER QA 3.9

Class Exercise

1-400 m 2-750 m 3-1 km

4-Harry would beat Terry by 40 m in a 200 m race. So, for Terry, 40 m = 10 sec and his speed is 4 m/s. So, he takes 50 seconds for 200 m and Harry takes $50 - 10 = 40$ seconds. Hence Harry's speed is 5 m/s.

5-A has to run entire 600 meters while B has to run only 500 meters. By the time A runs 600m, B runs only 480 meters. Therefore A wins by 20 meters.

6-A beats D by 580 m in a kilometre race. 7-200 meters/min. 8-1 m/s

9-7.5 min, at a distance 150 metres along the track. 10-15 min. 11-3 min.

12-180 m in the clockwise direction from the starting point.

13-After 4.5 min, 30 m anticlockwise from A's starting point 14-7.5 minutes

15-Therefore they meet in total 5 distinct points. 16-a-120 seconds b-120 seconds

c-one 17-They will meet for the first time and always at starting point.

18-After 40 hours, 240 km from the starting point in the direction of travel.

19-Minute hand $\rightarrow 6^\circ/\text{min}$, Hour hand $\rightarrow 0.5^\circ/\text{min}$. (This implies a relative speed of $5.5^\circ/\text{min}$)

20- $120 / 5.5 = 21 \frac{9}{11}$ 911 min past 4 o'clock 21- $150 / 5.5 = 27 \frac{3}{11}$ min past 8 o'clock

22- $180 / 5.5 = 32 \frac{8}{11}$ min past noon 23- $330 / 5.5 = 60$ min past 11 o'clock, i.e. 12 o'clock.

24- 160° 25-At 3.40, minute hand is ahead of hour hand by 130°

26-Correct time was shown at 10 am on Thursday. 27-At 3 pm 28-a-2016 and 2021

b-Sunday c-Tuesday 29-Hence 2nd October in the previous year comes on Tuesday.

Challengers

1-3

2-In 10 min, Hritik goes 2000m ahead of Abhishek. Since their relative speed is 100m/min, Abhishek will overtake Hritik in 20 min, i.e. at a distance of $20 \times 300 = 6000\text{m}$ from the starting point. Since John takes only 15 min to cover this distance, he should start 5 min after Abhishek.

3-3 4-1

CHAPTER QA 3.10

Class Exercise

1-Hence they will meet again after 17 "steps" or 51 minutes, at X 2-8 minutes

3-increase by 33%

4-Therefore, he sees all the trains that start from Kollam between 7 AM and 1 PM or total 13.

5-9 hours to reach P 6- $\frac{5}{3}$

7-72 min after 10:48 a.m. Hence they will reach at 12 noon 8- ≈ 1.047

9-3 : 1 10-1 : 7 11-125 km

12-Since the distance between A and B is 1200 m, the third meeting point is at a distance 100 m from point A and 1100 m from point B.

13-2 14-20 hours. 15-3 km 16-50 km 17-2 18-6 km

19- $88 \frac{8}{9}$ seconds 20-135 21-100 22-72 23- $10 \frac{10}{11}$ minutes

Challengers

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

CHAPTER QA 3.11

Class Exercise

$$1-\sin \alpha = \frac{6}{10} \quad \cos \alpha = \frac{8}{10} \quad \tan \alpha = \frac{6}{8}$$

$$\sin \beta = \frac{8}{10} \quad \cos \beta = \frac{6}{10} \quad \tan \beta = \frac{8}{6}$$

$$\operatorname{Cosec} \alpha = \frac{10}{6} \quad \sec \alpha = \frac{10}{8} \quad \cot \alpha = \frac{8}{6}$$

$$\operatorname{Cosec} \beta = \frac{10}{8} \quad \sec \beta = \frac{10}{6} \quad \cot \beta = \frac{6}{8}$$

$$2-a-\sin \text{ of the angle opposite to side } 9 \text{ cm} = 9 \frac{9}{41} \text{ 941}$$

$$b-\cos \text{ of the angle opposite to side } 40 \text{ cm} = 9 \frac{9}{41}$$

$$c-\tan \text{ of the angle opposite to side } 9 \text{ cm} = 9 \frac{9}{40}$$

3-

	30°	45°	60°
Sin	$\frac{1}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{\sqrt{3}}{2}$
Cos	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{2}$
Tan	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$

$$4-\sqrt{11}$$

$$5-1$$

$$6-1$$

$$7-3$$

$$8-1$$

$$9-3$$

$$10-0$$

$$11-\tan 45^\circ = 1$$

$$12-50 \text{ cm}^2$$

$$13-\frac{240}{\sqrt{2}} \text{ cm}^2$$

$$14-200 \sqrt{2} \text{ cm}^2$$

$$15-309 \text{ cm}^2$$

$$16-0$$

$$17-\frac{20}{\sqrt{3}} \text{ cm}^2$$

$$18-3$$

$$19-1$$

$$20-3$$

$$21-4$$

$$22-1000$$

Challengers

$$1-2$$

$$2-\frac{40\sqrt{3}}{9} \text{ cm}^2$$

$$3-\sqrt{2} : 1$$

$$4-\frac{50}{\sqrt{3}} \text{ km}$$

5-

$$1. \frac{b}{a^2+b^2} = \frac{1}{4}, \text{ which is not equal to } \frac{1}{2}$$

$$2. \frac{2a}{a^2+b^2} = \frac{2\sqrt{3}}{4}, \text{ which is not equal to } \frac{1}{2}$$

$$3. \frac{2b}{a^2+b^2} = \frac{2}{4} = \frac{1}{2}$$

$$4. \frac{a}{a^2+b^2} = \frac{\sqrt{3}}{4}, \text{ which is not equal to } \frac{1}{2}.$$

Hence, [3].

ANSWER KEY

CLASS EXERCISES – DI-LR

CHAPTER DI 3.1

Class Exercise

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

Challengers

1-4	2-3	3-1	4-2
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CHAPTER LR 3.1

Class Exercise

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

Challengers

1-1	2-4	3-3	4-3
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CHAPTER LR 3.2

Class Exercise

1-a-Hence 8 b-127 and hence these must be the required denominations

c-In this case, clearly powers of 2 will not be sufficient – 5 weights with powers of 2 will enable us to weigh only up till 31 g. But in this version of the problem, a condition has been removed. In the earlier question, the weights were to be placed in one pan only. In this case we can place weights in both the pans, thus allowing not only addition but also subtraction. Effectively, this adds an extra “degree of freedom” to the problem; and so instead of powers of 2, we can use powers of 3 here. Using weights of 1, 3, 9, 27 and 81g, we can make any required combination as follows

$1 = 1$	$2 = 3 - 1$	$3 = 3$	$4 = 3 + 1$
$5 = 9 - 3 - 1$	$6 = 9 - 3$	$7 = 9 - 3 + 1$	$8 = 9 - 1$
$9 = 9$	$10 = 9 + 1$	$11 = 9 + 3 - 1$	$12 = 9 + 3$
$13 = 9 + 3 + 1$	$14 = 27 - 9 - 3 - 1$	and so on....	

2-a- Divide the 27 coins into 3 groups X, Y, Z of 9 each. Weigh X v/s Y.

Case 1: Either X or Y goes down → it contains the heavy coin

Case 2: X and Y balance → Z contains the heavy coin

By this we will figure out which of X, Y and Z has the faulty coin. Now take this group and repeat the process, dividing into 3 groups P, Q, R of 3 coins each and weighing P v/s Q. In the third step we take the three coins L, M, N and weigh L v/s M. Thus we can identify the faulty coin in 3 steps.

b-Divide the 27 coins into 3 groups X, Y, Z of 9 each. Weigh X v/s Y and X v/s Z.

Case 1: If both the above cases are unbalanced, then X is the faulty group. In that case, if X has gone down both times, the faulty coin is heavy, while if X has gone up, it is light.

Case 2: If one of the above cases (say X and Z) is balanced, then the third group (Y in this case) will have the faulty coin. If Y went down when weighing X v/s Y, then the coin is heavy, else it is light.

After this we know which group has the faulty coin and whether it is heavy or light. So we can determine the faulty coin in 2 more steps as above, resulting in a total of 4 steps.

c- We can pick 1 coin from bag 1, 2 from bag 2, and so on till 10 from bag 10 and weigh the lot. There will be 55 coins in total. If all these coins were of 10 gm, the total weight would have been 550, but each forged coin reduces the weight by 1 gm. So if the weight reduces by n grams, then the nth bag has the faulty coin (for example if the total comes to 547 gm, then the 3rd bag contains forgeries).

3-a-Let's call the switches A, B and C. Switch on A. Wait for ten minutes, then switch off A, switch on B, and walk in. Now if the light is on, the correct switch is B. If it is off, touch the bulb – if it is hot then A is the switch, while if it is cold, C must be the correct one.

b-Let's call the switches A, B, C and D. Switch on A and B. Wait for ten minutes, then switch off B, switch on C, and walk in and immediately touch the bulb. Now if the light is on and hot, the correct switch is A. If it is off and hot, it is B. If it is on and cold, it is C. And if it is off and cold, it is D.

4-There will be 8 such cubes so their total will be $8 * 108.5 = 868$

5-There will be 64 such cubes so their total will be $64 * 108.5 = 6944$

6-There will be 24 such cubes so their total will be $24 * 108.5 = 2604$

7-There will be 8 cubes at the vertices and another 8 on each of the 6 faces for a total of 56 cubes so their total will be $28 * 108.5 = 3038$

8-11 9-52 10-84 11-4 12-Hence 99

13-The claims made by the proposition are “vowel → even” and “odd → consonant”. So we need to turn over the cards which have a vowel or an odd number, i.e. A and 1.

14-The trick here is to ask a question that incorporates both their answers at once. For example, you could ask one of the guards, “If I were to ask your friend there which road goes to A, where would he point?”. If the guard you asked is telling the truth, he will tell us the answer which the other guard would have given, which would be a lie. On the other hand, if the guard you asked is lying, he will tell you the opposite of the other, truthful, guide's answer – which would again be a lie. Either way the guard will point to the road going to B, so you should take the other road.

15-Hence U

16-Hence, 55

17-Hence 28

18-Hence F, M, A

19-Hence 18

20-Hence FOUR

Challengers

1-Jafar and Dahlia

2-55%

3-23

4-5

ANSWER KEY

CLASS EXERCISES – VERBAL ABILITY

CHAPTER VA 3.1

Class Exercise

- 1-No error 2-No error 3-No error 4-*is arriving* ... 5-... *is a large sum*
- 6-The sentence is correct with the singular 'makes'. Also, when it is used as a mathematical product i.e., two multiplied by two is four (makes four). However, the plural make is more common.
- 7-Singular noun *stitch* should take singular verb *saves*.
- 8-Bread and butter *is* his favourite food. Here, the two nouns, bread and butter, refer to the same idea. Hence, the verb is singular.
- 9-French, as well as German, *was* taught in the institute.
Here, French and German are joined to a singular subject by *as well as*. They are parenthetical. Hence the verb is singular.
- 10-There *was* neither food nor water in the house.
Here, the singular subjects food and water are connected by a *nor*. Thus, they require a singular verb.
- 11-Politics *is* always discussed during his lecture.
Though politics is in plural form, it is singular in meaning. Hence, it takes a singular verb.
- 12-The cattle *was* grazing in the meadow till late evening.
Here, *cattle* is a collective noun taking a singular verb as the collection (cattle) is thought of as one whole.
- 13-Neither of my children *goes* to school.
Here the reference is to each of the children. So the verb has to be singular.
- 14-Neither Ram nor his parents *were* present in the party.
When the subjects joined by *or*, *nor* are of different numbers, the verb agrees with the nearest subject; in this case plural verb. *Present* is in agreement with plural subject *parents*.
- 15-Indefinite pronouns like *none* may be used both as a singular and a plural; here *none* refers to all his relations, hence, *stay*.
- 16-Where two subjects of different numbers are connected by *or*, the verb agrees with the nearest subject. *Representatives* is plural, hence, the following verb should be *are/were*.
- 17-whoever, who 18-my, whom 19-myself, him 20-they, her
- 21-Whosoever, her 22-his, mine 23-He, who 24-who, whom 25-himself, his
- 26-whom, me 27-I 28-him 29-but 30-them 31-he
- 32-*themselves* — reflexive pronoun 33-*Each* — distributive pronoun
- 34-*Either* — distributive pronoun 35-*None* — indefinite pronoun
- 36-*Somebody* — indefinite pronoun 37-*This* — demonstrative pronoun
- 38-*They* — personal pronoun; 39-*ours* — possessive pronoun
- 40-*He* — personal pronoun 41-*I* — personal pronoun

CHAPTER VA 3.2

Class Exercise

1-14-Refer to the Explanatory Answers.

15-4	16-4	17-4	18-3	19-2	20-1	21-1	22-3	23-4	25-2	26-4	27-4
28-3	29-4	30-A	31-D	32-D	33-B	34-D	35-B	36-A	37-D	38-B	39-2
40-1	41-4	42-2	43-3	44-2	45-3	46-4	47-1	48-2			

CHAPTER VA 3.3

Class Exercise

1-25-Refer to the Explanatory Answers.

26-5	27-4	28-3	29-2	30-3	31-1	32-4	33-4	34-3	35-1
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36-50-Refer to the Explanatory Answers.

CHAPTER VA 3.4

Class Exercise

1-33-Refer to the Explanatory Answers.

34-2	35-4	36-2	37-1	38-1	39-4
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CHAPTER VA 3.5

Class Exercise

1-20-Refer to the Explanatory Answers.

21-1	22-3	23-2	24-4	25-1	26-3
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CHAPTER VA 3.6

Class Exercise

PUNCTUATION

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

GRAMMAR REVIEW

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

ANSWER KEY

PRACTICE EXERCISES – QUANTITATIVE ABILITY

CHAPTER QA 3.1

Practice Exercise									
1- x°	2- 60°	3- 90°	4a- 5° , b- 40° , c- 20°			5- 110°	6-PQ=280, QR = 120,		
SR=160	7- 120°	8- 90°	9- 110°	10-3	11-3	12-1	13-3	14-2	15-3
16-3	17-4	18-1	19-2	20-3	21-15	22-80			

CHAPTER QA 3.2

Practice Exercise									
1a-DE = 8.5, EF = 0.97, b-7.5, c-1.15, d-1 : 1					2-1	3-4	4-3	5-2	6-4
7-1	8-1	9-1	10-4	11-1	12-2	13-3	14-1	15-3	16-1
17-2	18-2	19-3	20-12	21- 35°	22-2	23-2	24-3		

CHAPTER QA 3.3

Practice Exercise 1									
1-3	2-4	3-3	4-1	5-2	6-3	7-2	8-3	9-3	10-2
11-1	12-1	13-1	14-75%	15-28	16-1	17-2	18-4	19-2	20-96

Practice Exercise 2									
1-1	2-1	3-4	4-4	5-1	6-1	7-4	8-1	9-2	10-3
11-2	12-2	13-3	14-2	15-3	16-3	17- 36cm^2	18-2	19-2	20-1
21-4									

CHAPTER QA 3.4

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

CHAPTER QA 3.5

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

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

CHAPTER QA 3.6

Practice Exercise 1									
1-3	2-1	3-3	4-2	5-4	6-2	7-3	8-4	9-1	10-2
11-3	12-4	13-1	14-1	15-35m	16-3	17-3	18-3	19-3	20-3
21-3									
Practice Exercise 2									
1-2600	2-2	3-3	4-3	5-4	6-1	7-4	8-3	9-4	10-4
11-1	12-2	13-4	14-1	15-1	16-3	17-1	18-1	19-4	20-3
21-49434									

CHAPTER QA 3.7

Practice Exercise 1								
1-60kmph	2-5.4hours	3-42km	4-1	5-4	6-3	7-2	8-4	9-2
10-2	11-2	12-4	13-3	14-1	15-4	16-2	17-2	
18-7hours	30 minutes	19-1125m	20-3000m					
Practice Exercise 2								
1-5kmph	2-30min	3-2	4-4	5-2	6-3	7-1	8-3	9-1
10-3	11-1	12-2	13-3	14-2	15-4	16-3	17-2	18-30km/h
19-2	20-2							

CHAPTER QA 3.8

Practice Exercise 1									
1-3	2-1	3-1	4-3	5-1	6-2	7-3	8-1	9-3	10-2
11-1	12-1	13-2	14-1	15-3	16-2	17-4	18-3	19-6	
20-8 days		21-5700							
Practice Exercise 2									
1-2	2-3	3-1	4-2	5-1	6-2	7-3	8-2	9-3	10-3
11-3	12-3	13-3	14-2	15-3	16-3	17-2	18-2		19-30days
20-20									

CHAPTER QA 3.9

Practice Exercise									
1-1	2-1	3-3	4-1	5-1	6-1	7-1	8-2	9-2	10-2
11-2	12-3	13-2	14-3	15-4	16-1	17-1	18-1	19-2	20-4
21-1	22-2	23-2	24-100m						

CHAPTER QA 3.10

Practice Exercise									
1-2	2-4	3-4	4-5	5-3	6-1	7-2	8-2	9-1	10-1
11-3	12-2	13-2200	14-3000m	15-2	16-3	17-2	18-4	19-84	
20-56									

CHAPTER QA 3.11

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

ANSWER KEY

PRACTICE EXERCISES

DATA INTERPRETATION & LOGICAL REASONING

CHAPTER DI 3.1

Practice Exercise 1									
1-6	2-2	3-1	4-5	5-2	6-1	7-4	8-1	9-24 minutes.	
10-95 minutes	11-4 customers (A, F, I and L)				12-5 minutes	13-3	14-2	15-3	
16-4									
Practice Exercise 2									
1-4	2-1	3-4	4-1	5-21	6-4	7-23200	8-3	9-3	10-3
11-4	12-4	13-1	14-3	15-2					
Practice Exercise 3									
1-1	2-3	3-2	4-1	5-4	6-3	7-2	8-1	9-2	10-3
11-3	12-1	13-4	14-2	15-3	16-4	17-1			

CHAPTER LR 3.1

Practice Exercise 1									
1-0	2-26	3-28	4-6	5-3	6-4	7-4	8-1	9-12	10-2
11-12	12-1	13-2	14-2	15-2	16-2				
Practice Exercise 2									
1-1	2-4	3-4	4-3	5-3	6-170	7-4	8-130	9-6	10-1
11-3	12-0	13-2	14-1	15-4	16-5	17-4			

CHAPTER LR 3.2

Practice Exercise 1									
1-2	2-4	3-2	4-1	5-225 cubes	6-3375 cuboids	7-210 cubes			
8-3150 cuboids	9-1	10-3	11-3	12-2	13-3	14-4	15-2		
Practice Exercise 2									
1-2	2-14	3-0	4-10 letters	5-3	6-2	7-1	8-2	9-4	
10-1	11-4	12-3	13-2	14-1	15-4	16-2	17-1	18-1	19-2
20-2	21-4	22-1	23-2						

ANSWER KEY

PRACTICE EXERCISES – VERBAL ABILITY

CHAPTER VA 3.1

Practice Exercise 1
Q1-63: Refer to the Explanatory Answers.
Practice Exercise 2
Q1-63: Refer to the Explanatory Answers.

CHAPTER VA 3.2

Practice Exercise 1									
1-2	2-1	3-1	4-2	5-4	6-1	7-4	8-4	9-3	10-4
11-C	12-D	13-B	14-A	15-C	16-C	17-B	18-A	19-A	20-C
21-3	22-1	23-4	24-3	25-2	26-2	27-4	28-3	29-3	30-4
31-4	32-4	33-3	34-2	35-3	36-3	37-4	38-1	39-4	40-1
41-4	42-4	43-1	44-4	45-2	46-4	47-2	48-3	49-4	50-1
51-4	52-1	53-3	54-3	55-4	56-4	57-4	58-2	59-1	60-4
Practice Exercise 2									
1-4	2-4	3-3	4-4	5-1	6-4	7-1	8-3	9-1	10-2
11-3	12-1	13-1	14-4	15-2	16-3	17-2	18-1	19-2	20-1
21-1	22-3	23-4	24-1	25-1	26-1	27-2	28-1	29-3	30-3
31-2	32-1	33-3	34-2	35-2	36-2	37-4	38-2	39-3	40-1
41-2	42-4	43-3	44-4	45-2	46-2	47-1	48-4	49-2	50-C
51-B	52-C								
Practice Exercise 3									
1-4	2-1	3-3	4-2	5-2	6-1	7-4	8-1	9-1	10-1
11-4	12-2	13-3	14-2	15-3	16-2	17-4	18-1	19-1	20-1
21-3	22-2	23-1	24-4	25-2	26-3	27-3	28-2	29-1	30-4
31-3	32-4	33-1	34-4	35-2	36-4	37-1	38-1	39-4	40-3
41-2	42-4	43-3	44-2	45-4	46-2	47-4	48-4	49-1	50-1
51-3	52-2	53-3	54-1	55-1	56-4	57-4	58-3	59-1	60-2
Practice Exercise 4									
1-1	2-4	3-2	4-4	5-4	6-3	7-4	8-2	9-3	10-4
11-4	12-1	13-1	14-3	15-1	16-2	17-2	18-4	19-2	20-3
21-1	22-2	23-3	24-2	25-4	26-1	27-3	28-4	29-4	30-4
31-1	32-2	33-4	34-4	35-2	36-2	37-1	38-3	39-2	40-1
41-4	42-4	43-4	44-1	45-1	46-2	47-3			

Practice Exercise 5									
1-22-3	3-4	4-3	5-2	6-4	7-1	8-3	9-3	10-4	
11-2	12-1	13-2	14-4	15-3	16-1	17-4	18-3	19-4	20-3
21-2	22-3	23-4	24-2	25-3	26-4	27-3	28-2	29-1	30-1
31-4	32-1	33-2	34-1	35-2	36-1	37-2	38-1	39-1	40-3
41-4	42-2								
Q43-45: Refer to the Explanatory Answers.									
Practice Exercise 6									
1-2	2-1	3-1	4-1	5-1	6-2	7-1	8-3	9-3	10-3
11-2	12-1	13-4	14-1	15-2	16-4	17-3	18-2	19-1	20-3
21-1	22-4	23-1	24-4	25-3	26-3	27-2	28-1	29-2	30-4
31-4	32-4	33-2	34-2	35-4	36-1	37-3	38-2	39-3	40-3
41-4	42-1								

CHAPTER VA 3.3

Practice Exercise 1									
Q1-45: Refer to the Explanatory Answers.									
46-3	47-1	48-3	49-2	50-1					
Practice Exercise 2									
Q1-40: Refer to the Explanatory Answers.									
41-4	42-3	43-4	44-3	45-2	46-4	47-2	48-3	49-3	50-2

CHAPTER VA 3.4

Practice Exercise 1									
Q1-20: Refer to the Explanatory Answers.									
21-3	22-3	23-4	24-1	25-3	26-4	27-3	28-4	29-3	30-3
31-3	32-3	33-2	34-4						
Practice Exercise 2									
Q1-45: Refer to the Explanatory Answers.									
Practice Exercise 3									
Q1-45: Refer to the Explanatory Answers.									

CHAPTER VA 3.5

Practice Exercise 1

Q1-22: Refer to the Explanatory answers.

23-1 24-2 25-2 26-1 27-1 28-1

Practice Exercise 2

1-4

Q2-21: Refer to the Explanatory answers.

CHAPTER VA 3.6

Practice Exercise 1

1-1	2-2	3-1	4-3	5-1	6-4	7-1	8-3	9-2	10-1
11-4	12-2	13-2	14-3	15-2	16-1	17-4	18-3	19-1	20-2
21-2	22-2	23-3	24-1	25-3	26-2	27-1	28-3	29-3	30-3
31-4	32-1	33-2	34-3	35-2					

Practice Exercise 2

1-4	2-4	3-2	4-4	5-3	6-4	7-2	8-4	9-2	10-1
11-1	12-2	13-2	14-2	15-1	16-3	17-3	18-1	19-2	20-2
21-3	22-2	23-4	24-1	25-2	26-1	27-3	28-4	29-3	30-3
31-3	32-3	33-2	34-4	35-4					

Practice Exercise 3

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

Practice Exercise 4

1-2	2-1	3-4	4-2	5-4	6-2	7-3	8-4	9-3	10-1
11-2	12-2	13-3	14-3	15-4	16-2	17-3	18-3	19-3	20-4
21-1	22-4	23-3	24-1	25-3	26-4	27-3	28-4	29-2	30-3
31-1	32-4	33-2	34-3	35-1	36-4	37-2			

Practice Exercise 5

1-3	2-4	3-3	4-4	5-2	6-3	7-4	8-3	9-1	10-3
11-3	12-2	13-3	14-4	15-3	16-2	17-2	18-4	19-1	20-2
21-4	22-4	23-1	24-4	25-3	26-3	27-3	28-4	29-2	30-3
31-2									