

# Quantitative Reasoning Book 6

## Answer key

### Exercise 1: Page 5-8

#### A

- |      |      |
|------|------|
| 1. d | 2. b |
| 3. c | 4. d |
| 5. a | 6. A |

#### B

- $6000000 + 51000 + 500$
- $70000000 + 200000 + 80 + 7$
- $3400000 + 490000 + 28000 + 800 + 70 + 6$
- $40000000 + 7500000 + 63000 + 800 + 90 + 20$
- $1400000 + 40000 + 400 + 6$
- $90000000 + 500000 + 40 + 1$
- $870000000 + 950000 + 700 + 60 + 2$
- $7300000 + 50000 + 300 + 7$
- $58000000 + 400 + 20 + 3$
- $2300000 + 30000 + 10$
- $5 \times 10000 + 0 + 1 \times 100 + 2 \times 10 + 4 \times 1$
- $8 \times 1000000 + 6 \times 100000 + 8 \times 10000 + 0 + 7 \times 100 + 7 \times 10 + 4 \times 1$
- Smallest 4-digit number = 1158  
Greatest 4-digit number = 8851
- Smallest 4-digit number = 3345  
Greatest 4-digit number = 5543
- Smallest 4-digit number = 0039  
Greatest 4-digit number = 9930
- 11160
- 5544
- Ten crore twenty lakh one thousand two hundred ninety nine
- Nine crore ninety one lakh nineteen thousand nine hundred eleven
- Seventy one lakh twenty five thousand sixty four
- 421000
- 813050811
- 354023209
- 4410019
- 60000132

### Exercise 2: Page 9-12

#### A

- |            |            |
|------------|------------|
| 1. 200000  | 2. 7000000 |
| 3. 200000  | 4. 3000000 |
| 5. 7000000 | 6. 6000000 |
| 7. 40000   |            |

#### B

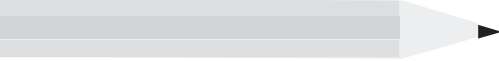
- $10,000 + 400 + 90 + 2$
- $50000 + 9000 + 400 + 1$
- $1,00,000 + 20000 + 400 + 90 + 2$
- $6,103,446 = 6000000 + 100000 + 3000 + 400 + 40 + 6$
- $45,45,000 = 4500000 + 45,000$

#### C


- |  |            |
|--|------------|
| 1. 98621                                     | 2. 12689   |
| 3. 12869                                     | 4. 96821   |
| 5. 12896                                     | 6. 98621   |
| 7. 5   |            |
| 8. $2000000 + 700000 + 11000 + 700 + 80 + 3$ |            |
| 9. 99998                                     | 10. 150    |
| 11. 300000                                   | 12. 300000 |
| 13. 500000                                   | 14. 500000 |
| 15. 99000                                    | 16. 9990   |
| 17. 0  | 18. digit  |
| 19. 10000                                    | 20.        |
| 21. 999999                                   |            |

### Exercise 4: Page 17-24

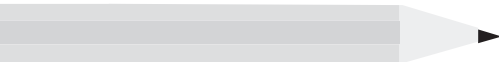
- |                 |                 |
|-----------------|-----------------|
| 1. A=1, B=8     | 2. A=2, B=6     |
| 3. A=15, B=0    | 4. A=-18, B=-20 |
| 5. A=-18, B=-20 | 6.              |
| 7. A=28, B=17   | 8. A=30, B=25   |
| 9. A=, B=14     | 10. A=29, B=18  |
| 11. A=14, B=10  | 12. A=25, B=11  |
| 13. A=11, B=25  | 14. A=12, B=7   |
| 15. A=9, B=20   | 16. A=12, B=13  |
| 17. A=13, B=12  | 18. A=9, B=14   |
| 19. A=15, B=4   | 20. A=5, B=4    |
| 21. A=3, B=10   | 22. A=62, B=29  |
| 23. A=7, B=8    | 24. A=10, B=3   |
| 25. A=50, B=40  | 26. A=10, B=10  |
| 27. A=5, B=4    | 28. A=7, B=15   |
| 29. A=5, B=8    | 30. A=20, B=50  |

**Exercise 5: Page 25-27****A** 

- |         |         |
|---------|---------|
| 1. 40   | 2. 120  |
| 3. 30   | 4. 480  |
| 5. 48   | 6. 80   |
| 7. 120  | 8. 400  |
| 9. 300  | 10. 208 |
| 11. 16  | 12. 153 |
| 13. 80  | 14. 40  |
| 15. 390 | 16. 720 |
| 17. 300 | 18. 75  |
| 19. 148 | 20. 120 |

**B** 

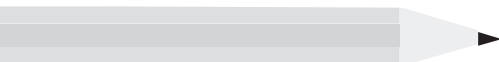
- |      |      |
|------|------|
| 1. d | 2. a |
|------|------|

**C** 

- |        |         |
|--------|---------|
| 1. 36  | 2. 40   |
| 3. 600 | 4. 216  |
| 5. 150 | 6. 1260 |
| 7. 40  | 8. 300  |

**Exercise 6: Page 28-30****A** 

- |        |        |
|--------|--------|
| 1. 4   | 2. 31  |
| 3. 12  | 4. 4   |
| 5. 40  | 6. 18  |
| 7. 12  | 8. 36  |
| 9. 16  | 10. 8  |
| 11. 3  | 12. 8  |
| 13. 10 | 14. 15 |
| 15. 4  | 16. 5  |
| 17. 4  | 18. 1  |
| 19. 1  | 20. 3  |
| 21. B  | 22. C  |

**B** 

- |        |       |
|--------|-------|
| 23. 97 | 24. 2 |
| 25. 17 | 26. 8 |
| 27. 3  | 28. 4 |
| 29. 10 | 30. 5 |

**Exercise 7: Page 31-34**

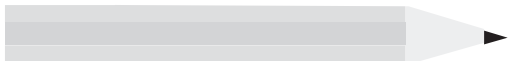
- |                    |                    |
|--------------------|--------------------|
| 1. 4               | 2. 25              |
| 3. 8               | 4. 8               |
| 5. $\frac{1}{3}$   | 6. $\frac{1}{4}$   |
| 7. 9               | 8. 1               |
| 9. $\frac{1}{3}$   | 10. $\frac{1}{2}$  |
| 11. 0              | 12. $\frac{10}{3}$ |
| 13. $\frac{3}{5}$  | 14. 10             |
| 15. $\frac{42}{5}$ | 16. 3              |
| 17. 15             | 18. 3              |
| 19. 5              | 20. 24             |
| 21. $\frac{10}{9}$ | 22. $\frac{8}{3}$  |
| 23. $\frac{5}{6}$  | 24. $\frac{3}{10}$ |
| 25. $\frac{3}{2}$  | 26. $\frac{7}{12}$ |
| 27. $\frac{3}{1}$  | 28. $\frac{2}{3}$  |

**Exercise 8: Page 35-39****A** 

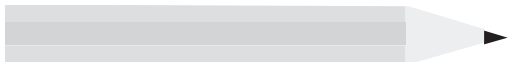
- |                |      |
|----------------|------|
| 1. Refer table | 2. 6 |
| 3. 4           | 4. 6 |
| 5. 24          | 6. 4 |
| 7. 8           |      |

**B** 

- |         |          |
|---------|----------|
| 1. 4    | 2. 12    |
| 3. 1.6m | 4. \$120 |

**C** 

- |                 |              |
|-----------------|--------------|
| 1. d            | 2. \$12.5    |
| 3. 5:1.2        | 4. 40:125    |
| 5. a            | 6. 36 and 64 |
| 7. 14810 votes. | 8. 15        |
| 9. d            | 10. d        |
| 11. a           | 12. b        |
| 13. d           |              |

**Exercise 9: Page 40-43****A** 

- |         |         |
|---------|---------|
| 1. 1:2  | 2. 2:3  |
| 3. 2:1  | 4. 5:4  |
| 5. 4:3  | 6. 7:8  |
| 7. 2:1  | 8. 3:2  |
| 9. 7:3  | 10. 6:5 |
| 11. 3:2 | 12. 2:7 |

**B**

1. 2:1
2. 64.3/100
3. 7:9
4. 6:5
5. b
6. 6
7. b

**Exercise 10: Page 44-49****A**

1. d
2. a
3. c
4. b
5. b
6. a

**B**

7. b
8. a
9. 26
10. d
11. b
12. d
13. c
14. b
15. a

**C**

1. a
2. b
3. 225
4. c
5. c

**D**

1. a
2. c
3. b
4. d
5. a

**E**

1. b
2. a
3. 9
4. d
5. 3

**Exercise 11: Page 50-54****A**

1. a
2. b
3. c
4. d
5. a

**B**

1. b
2. c
3. d
4. c

5. a

**C**

1. b
2. a
3. c
4. 12

**D**

1. a, 2. c, 3. b, 4. d, 5. b, 6. a

**E**

1. b, 2. a, 3. c, 4. a, 5. D

**Exercise 12: Page 55-61****A**

1. = 56, Median=7, Mode=6
2. Mean=23, Median=21.5, Mode=17
3. Mean=78, Median=73, Mode=92
4. Mean=61.38, Median=61, Mode= 61
5. Mean=53, Median=59, Mode= 75
6. Mean = 69, Median = 72, Mode = 55
7. Mean = 63.3, Median = 61.5, Mode = 56 and 68
8. Mean = 2.53, Median = 3, Mode = 3
9. Mean = 3.416, Median = 3, Mode = 3
10. Mean = 31.83, Median = 30, Mode = None

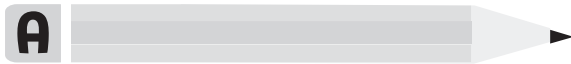
**B**

1. Mean=3, Median=3, Mode=1
2. Mean=7.6, Median=7, Mode= 4
3. Mean=75, Median=73, Mode=73
4. Mean=3.14, Median=3, Mode=2
5. Mean=7, Median=7, Mode=7
6. Mean=180.11, Median=184, Mode=193
7. Mode=74, 76
8. Jackals- Mean=77, ackals-Median=78
9. Mean=15, Median=12, Mode=3
10. Mean=8, Median=8, Mode=1
11. Mean=4.75, Median=2, Mode=3
12. Mean=2.8, Median=2, Mode=2
13. Mean=76, Median=70, Mode=70
14. Mean=13.5, Median=12, Mode=0
15. Mean=7.33, Median=7, Mode=10
16. Mean=2.8, Mode=0
17. a) 4, b) 15, c) 18, 25
18. Mean=4.9, Median=3

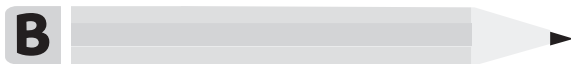
### Exercise 13: Page 62-65

- Mean=10.33, Median=10, Mode=12
- Mean=9.66, Median=8, Mode=8
- Mean=5.66, Median=6, Mode=6
- Mean=1516.66, Median=1500, Mode=1600
- Mean=71.42, Median=80, Mode=80
- Mean=37.85, Median=40, Mode=30
- Mean=174, Median=170, Mode=170
- Mean=2.5, Median=2, Mode=2
- Mean=30, Median=30, Mode=0
- Mean=72.85, Median=80, Mode=80

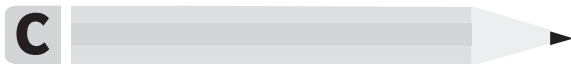
### Exercise 14: Page 66-69



- |      |       |
|------|-------|
| 1. c | 2. a  |
| 3. b | 4. a  |
| 5. d | 6. c  |
| 7. c | 8. d  |
| 9. a | 10. c |



d

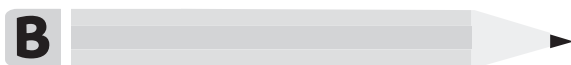


- Scalene, 2. Equilateral, 3. Acute, 4. Obtuse, 5. Isosceles, 6. Equilateral, 7. Two sides, 8.  $180^\circ$ , 9. Right angled, 10. Isosceles, 11. Equilateral, 12. False, 13. False

### Exercise 15: Page 70-74



- |       |                    |
|-------|--------------------|
| 1. b  | 2. b               |
| 3. a  | 4. a               |
| 5. b  | 6. a               |
| 7. a  | 8. b               |
| 9. b  | 10. a              |
| 11. b | 12. a              |
| 13. b | 14. $6\text{ m}^2$ |



- |             |               |
|-------------|---------------|
| 1. A, B, C  | 2. AD, DC, AC |
| 3. ABC, ADC | 4. 45         |
| 5. 31       |               |

### Exercise 16: Page 75-78

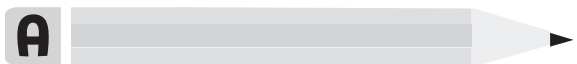


- a.  $7+2=2+7$
- c.  $11+0=11$
- d.  $6 * (6 + 3) = 6*6 + 6*3$
- c)  $(6 + 3) + 4 = 6 + (3 + 4)$
- b) Additive identity property
- a) Commutative property
- c) Distributive property
- d) Associative property
- d) None of these
- c) Distributive property
- The numbers can travel back and forth like a commuter.

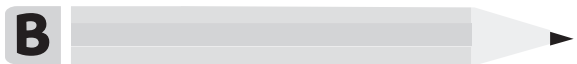


- 9, Commutative Property
- 5, Commutative Property
- 8, Associative Property
- 1232, Associative Property
- 21470
- No. Because  $a - b$  gives a different result than  $b - a$ . For example,  $6 - 2 = 4$ , but  $2 - 6 = -4$
- Distributive Property
- c.  $6 + 14 = 14 + 6$
- a.  $2+15=15+2$

### Exercise 17: Page 79-81



- a.  $1(1/3)$ ,  $5/2$ ,  $2(3/4)$
- b.  $1(5/9)$ ,  $2(5/3)$ ,  $6(5/2)$
- b.  $12/5$ ,  $5(3/4)$ ,  $7(1/11)$
- a.  $25/12$ ,  $23/4$ ,  $6(1/3)$
- c.  $1(1/3)$ ,  $1(3/2)$ ,  $3(15/4)$



- a.  $5(1/4)$ ,  $15/4$ ,  $3(4/5)$
- b.  $1(5/9)$ ,  $2(5/3)$ ,  $6(5/2)$
- c.  $2(3/4)$ ,  $5/21$ ,  $(1/3)$
- b.  $6(7/3)$ ,  $23/4$ ,  $48/11$
- c.  $1(1/5)$ ,  $4(3/2)$ ,  $3(15/4)$
- a.  $2/5$ ,  $3/5$ ,  $4/5$ ,  $7/5$
- c.  $1/6$ ,  $3/4$ ,  $6/7$ ,  $5/3$
- b.  $7/6$ ,  $7/5$ ,  $7/4$ ,  $7/2$
- $1/2$ ,  $5/4$
- $2/3$ ,  $3/3$ ,
- $1/10$ ,  $1/2$ ,
- $1/3$ ,  $3/5$

13.  $4/9, 8/3,$
14.  $3/14, 7/7$
15.  $2/121, 10/3$

### Exercise 18: Page 82-84

**A**

1.  $19/5$
3.  $27/4$
5.  $3(2/3)$
7. a.  $<$ , b.  $<$ , c.  $>$ , d.  $=$
8. a
10.  $11/4$
12.  $17/4$
2.  $1(1/4)$
4.  $4(1/4)$
6.  $1(1/4)$
9.  $25/45 - 12/45$
11.  $2(3/5)$
13.  $2(3/5)$

**B**

1. b
3. a
5. c
2. c
4. c

### Exercise 19: Page 85-86

1. 9
3. 7
5. 6, 3
7. none
9. c
11. a
2. 3
4. none
6. none
8. 6
10. c
12. d

### Exercise 20: Page 87-89

**A**

1. a.  $1(1/5)$
3. b.  $73/11$
5. b.  $3(4/5)$
7. d.  $9/7$
2. c.  $8/9$
4. b.  $9(12/5)$
6. a.  $27/8$
8. a.  $4(5/3)$

**B**

1. d. Both
2. c. Proper Fraction
3. a. Improper Fraction
4. a. Improper Fraction
5. d. Mixed and Improper Fraction
6. c. Mixed and Proper Fraction
7. c. Proper and Improper Fraction

### Exercise 21: Page 90-92

1. 4096
2. 256

3. 1
5. 1000000
7. 64
9. 20736
11. 729
13. 7776
15. 78125
17. 20736
19. 1419857
21. 3200000
23. 10077696
4. 64
6. 13
8. 0
10. 121
12. 1
14. 400
16. 729
18. 64000
20. 5832
22. 531441
24. 3375

### Exercise 22: Page 93-95

1. 61
3. 50
5. 1
7. 147
9. 1297
11. 216
13. 351
15. 12
17. 3370
19. 1297
21. 542080
2. 6
4. 38
6. 1000
8. 1
10. 6
12. 2
14. 2
16. 5
18. 83548
20. 12936
22. 83448

### Exercise 23: Page 96-97

1. a. Commutative property
2. d. Associative property
3. c. Zero property
4. None
5. a.  $2 \times 3 = 6$
6. c.  $2 \times (4 + 7) = 2 \times 4 + 2 \times 7$
7. a. Commutative property
8. b.  $8(4 \times 6) = (8 \times 4) \times 6$
9. d. None of these
10. d. None of these

### Exercise 24: Page 98-100

1.  $1/8$
3.  $2/3$
5.  $3/8$
7. 4
9.  $1/16$
11. 18
13.  $14/5$
15.  $2/3$
17.  $3/14$
19.  $3/8$
2.  $1/12$
4.  $1/3$
6.  $2/3$
8.  $8/2$
10.  $8/63$
12.  $2/3$
14.  $1/3$
16.  $1/3$
18. 5
20.  $10/12$

**Exercise 25: Page 101-105****A**

- |                   |                   |
|-------------------|-------------------|
| 1. $\frac{2}{25}$ | 2. 4              |
| 3. $\frac{21}{4}$ | 4. $\frac{7}{9}$  |
| 5. 6              | 6. 2              |
| 7. 18             | 8. $\frac{4}{5}$  |
| 9. 2.7            | 10. $\frac{5}{6}$ |

**B**

- |                  |                   |
|------------------|-------------------|
| 1. $1.34 < 1.42$ | 2. $7.86 > 5.89$  |
| 3. $3.20 = 3.2?$ | 4. $7.72 > 5.91$  |
| 5. $8.30 > 8.03$ | 6. a. 26.050 kg   |
| 7. b. 306.07     | 8. d. 265.1       |
| 9. $1.01 < 1.10$ | 10. $6.30 > 6.13$ |

**Exercise 26: Page 106-111****A**

- |                       |                       |
|-----------------------|-----------------------|
| 1. a. Profit of \$80  | 2. b. Loss of \$20    |
| 3. d. Loss of \$9     | 4. c. Profit of \$25  |
| 5. c. Loss of \$19    | 6. a. Profit of \$22  |
| 7. b. Loss of \$18    | 8. d. Profit of \$65  |
| 9. b. Loss of \$372   | 10. a. Loss of \$99   |
| 11. c. Profit of \$21 | 12. b. Loss of \$20   |
| 13. a. Profit of \$46 | 14. d. Profit of \$22 |
| 15. b. Loss of \$48   |                       |

**B**

- |              |                     |
|--------------|---------------------|
| 1. 0%        | 2. \$ 15500, 19.23% |
| 3. 130\$     | 4. 14.70%           |
| 5. \$1800    | 6. \$14500          |
| 7. \$66, 600 | 8. 30%              |
| 9. 23.79%    | 10. \$2956          |
| 11. \$ 14210 | 12. 3.2%            |
| 13. \$62000  | 14. 10.71%          |
| 15. \$5200   |                     |

**Exercise 27: Page 112-115****A**

- |       |       |
|-------|-------|
| 1. a  | 2. b  |
| 3. a  | 4. c  |
| 5. d  | 6. a  |
| 7. b  | 6. c  |
| 9. d  | 10. c |
| 11. a | 12. d |

**B**

- |                     |                     |
|---------------------|---------------------|
| 13. Loss = \$ 23    | 14. Loss = \$15310  |
| 15. Loss = \$7.3    | 16. Profit- \$36    |
| 17. Profit = 153000 | 18. Loss \$146      |
| 19. Profit = \$29   | 20. Profit = \$1550 |

**Exercise 28: Page 116-117**

- |      |       |
|------|-------|
| 1. b | 2. a  |
| 3. c | 4. a  |
| 5. d | 6. c  |
| 7. a | 8. d  |
| 9. b | 10. a |

**Practice Text 1: Page 118-119**

- |                        |          |
|------------------------|----------|
| 1. a                   | 2. b     |
| 3. d                   | 4. c     |
| 5. c                   | 6. d     |
| 7. 1                   | 8. 67/60 |
| 9. 420 cm <sup>2</sup> |          |

**Practice Text 2: Page 120-121**

- |           |                |
|-----------|----------------|
| 1. b      | 2. a           |
| 3. a      | 4. d           |
| 5. a      | 6. 25          |
| 7. obtuse | 8. equilateral |
| 9. a      | 10. 50629      |

**Practice Text 3: Page 122-123**

- |            |       |
|------------|-------|
| 1. i. a    | ii. b |
| 2. i. none | ii. a |
| 3. i. b    | ii. c |
| 4. c       | 5. b  |
| 6. d       | 7. a  |
| 8. d       |       |

**Practice Text 4: Page 124-125**

- |         |       |
|---------|-------|
| 1. i. b | ii. a |
| 2. d    | 3. b  |
| 4. c    | 5. b  |
| 6. a    | 7. b  |
| 8. d    |       |

**Practice Text 5: Page 126-127**

- |      |      |
|------|------|
| 1. c | 2. b |
| 3. a | 4. b |

5. d                      6. a  
7. b                      8. 50, 625

### Practice Text 6: Page 128-129



1. a                      2. b  
3. c                      4. d  
5. c                      6. a  
7. b



1. b                      2. d

### Practice Text 7: Page 130-131

1. d                      2. c  
3. b                      4. d  
5. c                      6. associate  
7. c                      8. d  
9. b

### Practice Text 8: Page 132-133

1. a                      2. b  
3. c                      4. a  
5. c                      6. c  
7. c                      8. a

### Practice Text 9: Page 134-136

1. a                      2. a  
3. b                      4. a  
5. i. c, ii. a            6. 45 years  
7. 4, 37,000            8. a  
9. a                      10. 36

### Practice Text 10: Page 137-138

1. c                      2. a  
3. a                      4. d  
5. c                      6. b  
7. a                      8. b  
9. N                      10. 512

### Practice Text 11: Page 139-140

1. a                      2. b  
3. c                      4. d  
5. b                      6. 1.34  
7. 5.50                  8. 7.89  
9. =                      10. 6.63

### Practice Text 12: Page 141-144

- |        |         |
|--------|---------|
| 1. c   | 2. d    |
| 3. d   | 4. d    |
| 5. d   | 6. b    |
| 7. a   | 8. a    |
| 9. c   | 10. b   |
| 11. a  | 12. 8:9 |
| 13. 16 | 14. 28  |
| 15. 16 |         |