## Math Part 1

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## Math Part 2

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## Ability Part 1

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## Ability Part 2

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42. Ⓙ Ⓚ Ⓛ Ⓜ Ⓝ
43. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
44. Ⓙ Ⓚ Ⓛ Ⓜ Ⓝ
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48. Ⓙ Ⓚ Ⓛ Ⓜ Ⓝ
49. Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ
50. Ⓙ Ⓚ Ⓛ Ⓜ Ⓝ

# MATH PART 1

**33 minutes**

**Directions:** Choose the best answer from the four given for each problem.

1. 1.90 written as a fraction is _____?

   (A) $1\frac{9}{100}$

   (B) $\frac{1}{90}$

   (C) $1\frac{1}{10}$

   (D) $1\frac{9}{10}$

2. Based on the table, how many more ships did England have than Portugal from 1600–1700?

   **Number of Ships Sailing to Asia from European Countries, 1500–1800**

   |  | 1500–99 | 1600–1700 | 1701–1800 |
   |---|---|---|---|
   | Portugal | 706 | 371 | 196 |
   | Netherlands | 65 | 1,770 | 2,950 |
   | England | — | 811 | 1,865 |
   | France | — | 155 | 1,300 |

   (J) 440 ships

   (K) 1,399 ships

   (L) 1,669 ships

   (M) Cannot be determined.

3. $\frac{5}{6} \div \frac{11}{12}$ is equal to _____?

   (A) $\frac{10}{11}$

   (B) $\frac{1}{12}$

   (C) $\frac{21}{12}$

   (D) $\frac{55}{72}$

4. Which of the following is <u>not</u> a prime number?

   (J) 29

   (K) 43

   (L) 57

   (M) 71

5. The least common denominator of $\frac{1}{5}$, $\frac{5}{6}$, and $\frac{1}{3}$ is _____?

   (A) 6

   (B) 12

   (C) 30

   (D) 60

6. Amanda uses three rolls of yarn to make one scarf. If she already has four rolls, how many more rolls must she buy in order to make a total of three scarves?

   (J) 3

   (K) 4

   (L) 5

   (M) 9

7. Based on the following chart, how much less revenue does worker B earn than worker D?

   **Revenue per Worker**
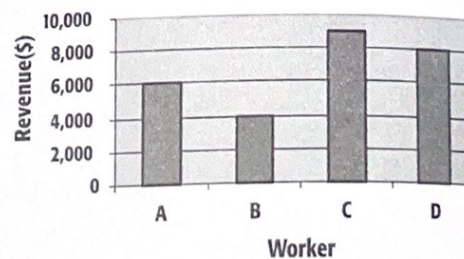
   

   (A) $1,000

   (B) $2,000

   (C) $3,000

   (D) $4,000

8. A bookstore just received a shipment of 126 new books that need to be displayed. If each shelf holds 9 books, how many shelves are needed in order to display all of the books?

(J) 9 shelves
(K) 14 shelves
(L) 16 shelves
(M) 32 shelves

9. $13^2 =$

(A) 26
(B) 52
(C) 166
(D) 169

10. Mary works at a fruit smoothie stand. How much will it cost for a large peach smoothie with calcium and protein supplements?

| Smoothie Flavors | Small | Large | Each Supplement $0.55 Extra |
|---|---|---|---|
| Strawberry-Banana | 2.65 | 3.75 | Calcium |
| Peach | 2.85 | 3.95 | Protein |
| Blueberry | 2.75 | 3.85 | Vitamin C |

(J) $3.95
(K) $4.50
(L) $4.85
(M) $5.05

11. What is the greatest common factor of 18 and 24?

(A) 3
(B) 6
(C) 8
(D) 24

12. What is the decimal equivalent of $\frac{5}{8}$?

(J) 0.58
(K) 0.6
(L) 0.625
(M) 1.6

13. Three different homeroom classes (A, B, and C) kept track of the total amount of outside reading books the students in each class completed each month. What is the only month in which Class B read more books than Class A?

**Monthly Totals of Books Read For Each Class**
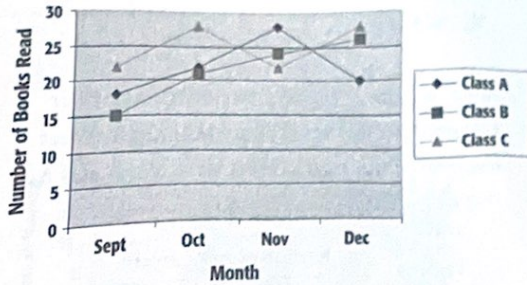


(A) September
(B) October
(C) November
(D) December

14. $15\% =$

(J) $\frac{3}{20}$

(K) $\frac{3}{5}$

(L) $\frac{7}{20}$

(M) $\frac{1}{5}$

15. Anna earns $40 for babysitting one night. If $5 of her total is tip, how much did Anna earn per hour if she worked 5 hours?

(A) $6
(B) $7
(C) $8
(D) $9

16. Brian decided to give his younger brother 30% of his allowance this week for helping him with his chores. If Brian ends up giving his brother $5.55, how much was his allowance for the week?

   (J)  $7.22
   (K)  $16.65
   (L)  $18.50
   (M)  $25.55

17. Mike, Maria, A.J., and Clare divided up their assigned project according to the chart. What fraction of the total project were Maria and A.J. responsible for?

| | Portion of Assignment |
|---|---|
| Mike | 0.10 |
| Maria | 0.25 |
| A.J. | 0.05 |
| Clare | 0.60 |

   (A)  $\frac{1}{4}$

   (B)  $\frac{7}{20}$

   (C)  $\frac{3}{10}$

   (D)  $\frac{3}{4}$

18. $1 - (-4) =$

   (J)  $-5$
   (K)  $5$
   (L)  $-3$
   (M)  $3$

19. Michael wants to bike over to his friend's house. He decides to take a shortcut through the park, which is 346 yards less than if he did not take the shortcut. If the distance from his house to his friend's house is 1,120 yards using the shortcut, what is the distance without using the shortcut?

   (A)  774 yards
   (B)  1,466 yards
   (C)  1,812 yards
   (D)  2,586 yards

20. The following table shows the scores of 40 students on a science test. Which is a correct histogram of the data?

| Scores | Number of Students |
|--------|--------------------|
| 51–60  | 2                  |
| 61–70  | 5                  |
| 71–80  | 12                 |
| 81–90  | 15                 |
| 91–100 | 6                  |

(K)

(J)

**Science Test Scores**
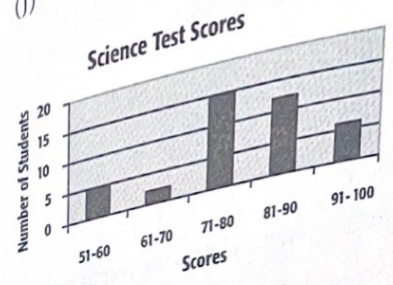


**Science Test Scores**
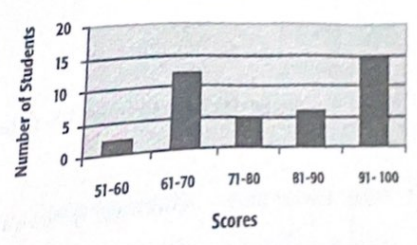


(M)

(L)

**Science Test Scores**
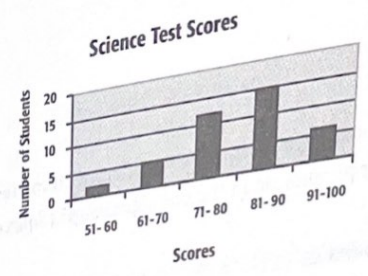


**Science Test Scores**
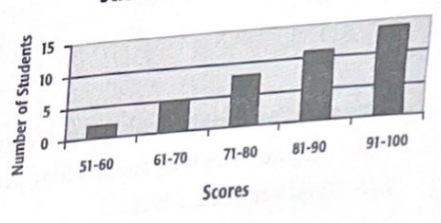


21. 0.000045 written in scientific notation is _____?

(A) $4.5 \times 10^{-5}$
(B) $4.5 \times 10^{5}$
(C) $45 \times 10^{-6}$
(D) $4.5 \times 10^{-4}$

22. Alexandra bought two books at the bookstore. One book cost $8.95 and the other was unmarked. If the total price came to $22.45, how much did the second book cost? (Assume there is no sales tax.)

(J) $13.50
(K) $14.40
(L) $14.50
(M) $31.40

23. For his science project, Chip decided to test how well plants grew with fertilizer. He started off by planting seeds in three different pots and labeling each of the plants. Plant A had no fertilizer. Plant B had the recommended amount of fertilizer. Plant C had four times the recommended amount of fertilizer. For ten consecutive days he measured the height of each plant in centimeters. The following table shows his results. Which plant grew the most from Day 7 to Day 9?

| Day | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Plant A (height in cm) | 0 | 1 | 2 | 2 | 3 | 4 | 7 | 9 | 12 | 14 |
| Plant B (height in cm) | 0 | 1 | 2 | 4 | 7 | 10 | 12 | 14 | 15 | 16 |
| Plant C (height in cm) | 0 | 0 | 1 | 1 | 2 | 3 | 4 | 4 | 5 | 5 |

(A) Plant A
(B) Plant B
(C) Plant C
(D) Cannot be determined from this data.

24. Jaime always puts $\frac{3}{4}$ of her weekly allowance into her savings account and uses the rest as her spending money. If she earned $18 this week for her allowance, how much money will be for spending?

(J) $4.50
(K) $6.00
(L) $3.00
(M) $13.50

25. The stacked bar graph shows the percentage of people in each age group for five different countries. What two countries have the smallest percentage of their population in the 65+ age group? (Source: CIA World Factbook, 2004)

**Age Stucture of Various Countries**
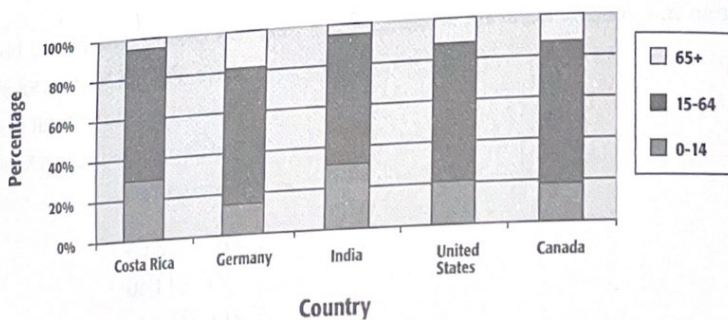


(A) Germany and Canada
(B) Costa Rica and India
(C) United States and Canada
(D) Costa Rica and United States

26. Joe works at a store which is currently having a sale where every frame is 30% off. A customer wants to purchase a frame that was originally priced at $24.90. How much is the new sale price?

(J)  $7.47
(K)  $8.30
(L)  $16.60
(M)  $17.43

27. The graph below shows oil production and oil consumption for five different countries. Which two countries consume more than they produce? (*Source: CIA World Factbook, 2004*)

**Oil Production and Consumption**
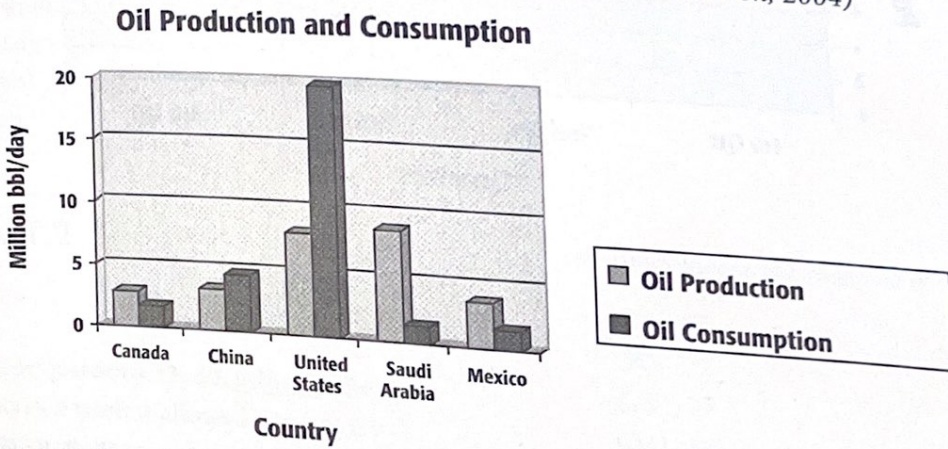


(A)  China and United States
(B)  Canada and China
(C)  United States and Saudi Arabia
(D)  Mexico and Canada

28. If peaches are on sale for $1.25 per pound, how much will 2.4 pounds cost?

(J)  $2.00
(K)  $2.40
(L)  $3.00
(M)  $3.25

29. Jordan wanted to keep track of how many points he scored during his final basketball game of the season. After each quarter, he recorded how many points he had earned. How many more points did Jordan earn in the second quarter than in the first and third quarters combined?

**Jordan's Basketball Score**
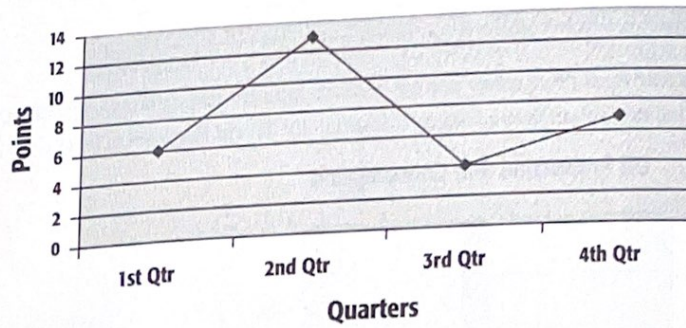


(A) 7
(B) 9
(C) 2
(D) 3

30. Based on the following table, what is the total percentage of young children and adults who are allergic to peanuts?

**Prevalence of Food Allergies in the United States**

| Food | Young Children | Adults |
| --- | --- | --- |
| Milk | 2.5% | 0.3% |
| Egg | 1.3% | 0.2% |
| Peanut | 0.8% | 0.6% |
| Tree nuts | 0.2% | 0.5% |
| Fish | 0.1% | 0.4% |
| Shellfish | 0.1% | 2.0% |
| Overall | 6% | 3.7% |

(J) 0.8%
(K) 0.6%
(L) 1.4%
(M) 9.7%

31. Based on the following chart of exchange rates, if Tony had one unit of currency from each country, which is worth the most in U.S. dollars?

| Currency | The foreign value equivalent of $1 |
|---|---|
| Australia | 1.2842 |
| Britain | 0.5416 |
| India | 45.420 |
| Euro | 0.7840 |

(A) Australia
(B) Britain
(C) India
(D) Euro

## MATH PART 2

### 7 minutes

Directions: For questions 33–50, estimate the answer; no scratch work is allowed. Do not try to calculate exact answers.

33. The closest estimate of 661 + 382 is ———.

(A) 800
(B) 900
(C) 1,100
(D) 1,300

34. The closest estimate of 539 ÷ 6 is ———.

(J) 9
(K) 90
(L) 900
(M) 9,000

35. The closest estimate of 25,840 − 16,109 is ———.

(A) 900
(B) 9,000
(C) 1,000
(D) 10,000

32. Martin decided to study for his math test by doing practice problems. If each problem takes him the same amount of time, and he finished 105 problems between the hours of 2 P.M. and 5 P.M., how many problems did he finish per hour?

(J) 35
(K) 21
(L) 52.5
(M) 33

36. The closest estimate of 6.44 × 11.38 is ———.

(J) 66
(K) 72
(L) 77
(M) 84

37. The number 8.542 rounded to the nearest tenths place is ———.

(A) 8.0
(B) 8.5
(C) 8.54
(D) 9.0

38. The closest estimate of $20.00 − $13.28 is ———.

(J) $7.00
(K) $6.00
(L) $5.00
(M) $4.00

39. The closest estimate of 23 + 25 + 32 is ———.

(A) 60
(B) 70
(C) 80
(D) 90

40. The closest estimate of $99 \times 72$ is ———.

   (J)  70
   (K)  700
   (L)  7,000
   (M)  70,000

41. The number 612.786 rounded to the nearest hundredths place is ———.

   (A)  600.000
   (B)  613.000
   (C)  612.800
   (D)  612.790

42. The closest estimate of 7,372 – 2,938 is ———.

   (J)  2,000
   (K)  3,000
   (L)  4,000
   (M)  5,000

43. Rounding to the nearest dollar, the closest estimate of $3.75 + $4.50 + $1.75 is ———.

   (A)  $8.00
   (B)  $9.00
   (C)  $10.00
   (D)  $11.00

44. The number 5,609 rounded to the nearest hundreds place is ———.

   (J)  6,000
   (K)  5,600
   (L)  5,700
   (M)  5,610

45. The closest estimate of $23,522 \div 3$ is ———.

   (A)  8
   (B)  80
   (C)  800
   (D)  8,000

46. The closest estimate of 15.87 – 5.38 is ———.

   (J)  9
   (K)  10
   (L)  11
   (M)  12

47. The closest estimate of $523 \times 563$ is ———.

   (A)  25,000
   (B)  30,000
   (C)  250,000
   (D)  300,000

48. Round 25.006 to the nearest tenths place.

   (J)  30.000
   (K)  25.000
   (L)  25.100
   (M)  25.010

49. The cost of Maggie's book with tax is $8.72. If she gives the cashier a 20 dollar bill, what is the closest estimate of the amount of change that she should receive?

   (A)  $11.00
   (B)  $12.00
   (C)  $13.00
   (D)  $14.00

50. The closest estimate of $(289 + 850) \div 40$ is ———.

   (J)  25
   (K)  30
   (L)  250
   (M)  300

# ABILITY PART 1

**25 minutes**

1.

   (A)    (B)    (C)    (D)    (E)

   (J)    (K)    (L)    (M)    (N)

2.

3.

   (A)    (B)    (C)    (D)    (E)

   (J)    (K)    (L)    (M)    (N)

4.

   (A)    (B)    (C)    (D)    (E)

5.

   (J)    (K)    (L)    (M)    (N)

6.

7.

|  | (A) | (B) | (C) | (D) | (E) |

8.

|  | (J) | (K) | (L) | (M) | (N) |

9.

|  | (A) | (B) | (C) | (D) | (E) |

10.

|  | (J) | (K) | (L) | (M) | (N) |

11.

|  | (A) | (B) | (C) | (D) | (E) |

12.

|  | (J) | (K) | (L) | (M) | (N) |

13.

|  | (A) | (B) | (C) | (D) | (E) |

| (J) | (K) | (L) | (M) | (N) |

14.

| (A) | (B) | (C) | (D) | (E) |

15.

| (J) | (K) | (L) | (M) | (N) |

16.

| (A) | (B) | (C) | (D) | (E) |

17.

| (J) | (K) | (L) | (M) | (N) |

18.

| (A) | (B) | (C) | (D) | (E) |

19.

| (J) | (K) | (L) | (M) | (N) |

20.
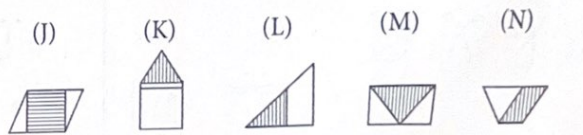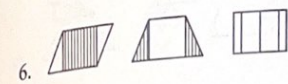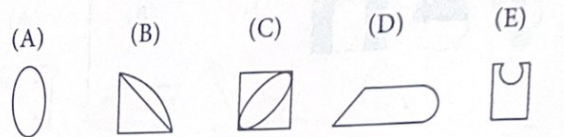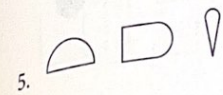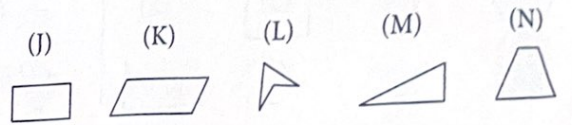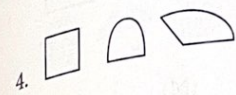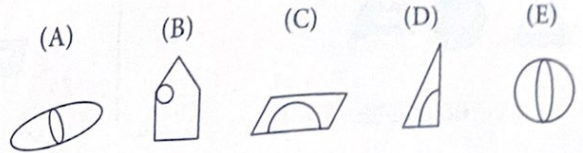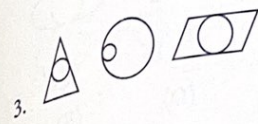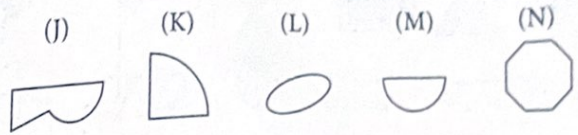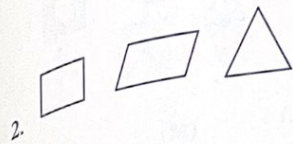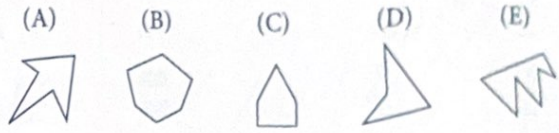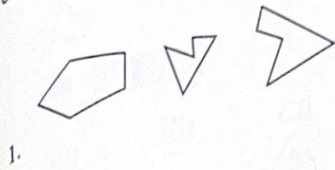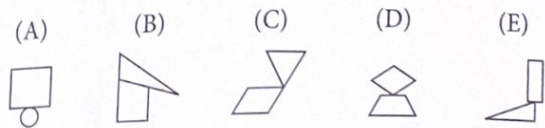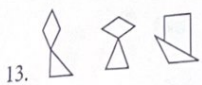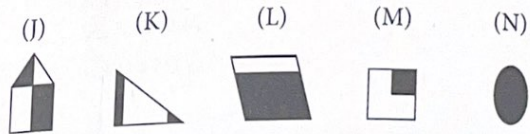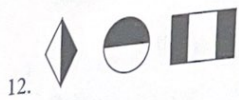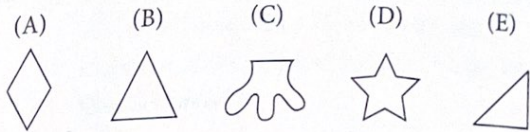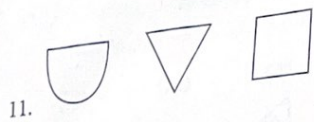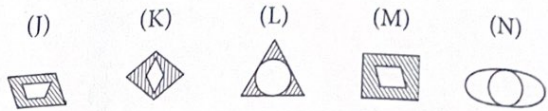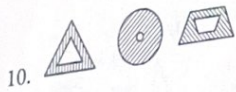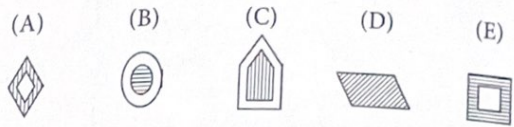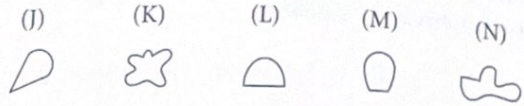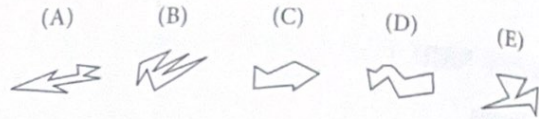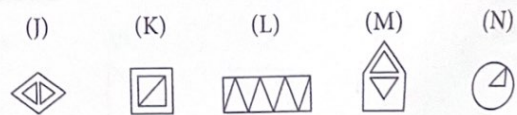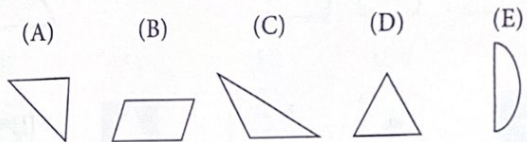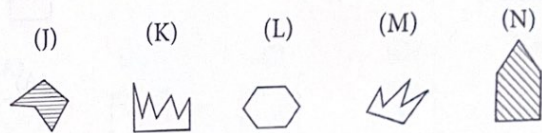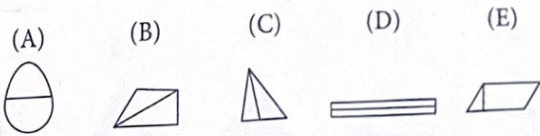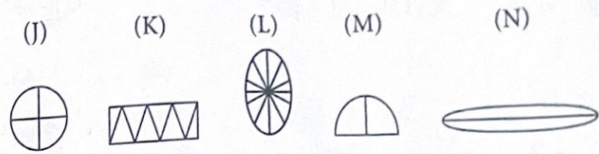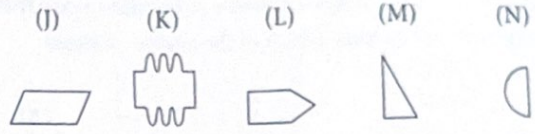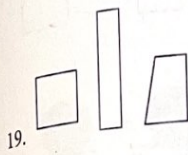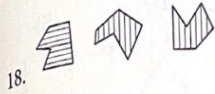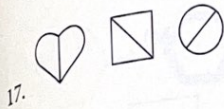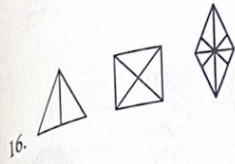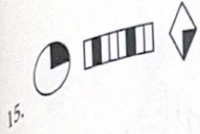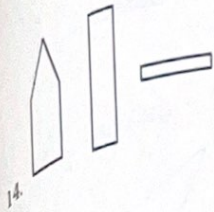
**Directions:** The second figure shows a particular change from the first figure. The third figure, if changed in the same way, will become which of the answer choices?

21. $\bigcirc \rightarrow \mathrm{D} : \triangle \rightarrow$

(A) (B) (C) (D) (E)

22. $\rightarrow :$

(J) (K) (L) (M) (N)

23. $\triangle \rightarrow \blacktriangle : \bigcirc \rightarrow$

(A) (B) (C) (D) (E)

(J) (K) (L) (M) (N)

24. $\square \rightarrow \square : \square \rightarrow$

(A) (B) (C) (D) (E)

25. $\triangle \rightarrow \square : \square \rightarrow$

(J) (K) (L) (M) (N)

26. $\triangle \rightarrow : \bigcirc \rightarrow$

(A)    (B)    (C)    (D)    (E)

27.

(J)    (K)    (L)    (M)    (N)

28.

(A)    (B)    (C)    (D)    (E)

29.

(J)    (K)    (L)    (M)    (N)

30.

(A)    (B)    (C)    (D)    (E)

31.

(J)    (K)    (L)    (M)    (N)

32.

(A)    (B)    (C)    (D)    (E)

33.

34.

(J)    (K)    (L)    (M)    (N)

35.

(A)    (B)    (C)    (D)    (E)

36.

(J)    (K)    (L)    (M)    (N)

37.

(A)    (B)    (C)    (D)    (E)

38.

(J)    (K)    (L)    (M)    (N)

39.

(A)    (B)    (C)    (D)    (E)

40.

(J)    (K)    (L)    (M)    (N)
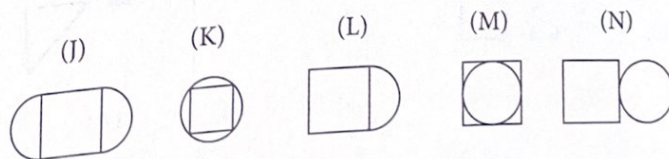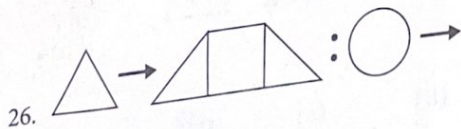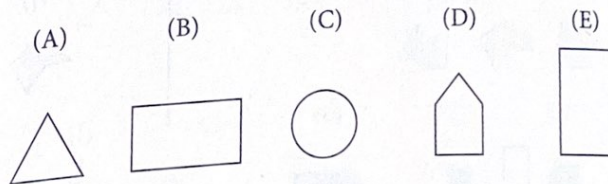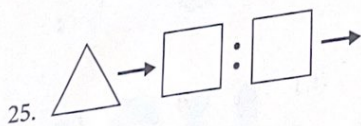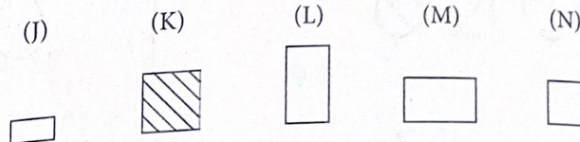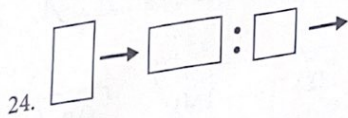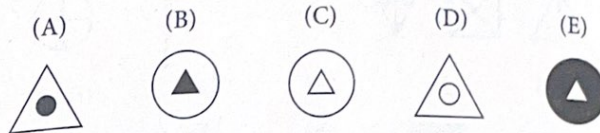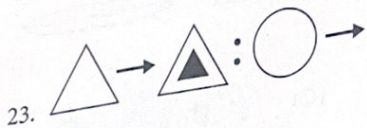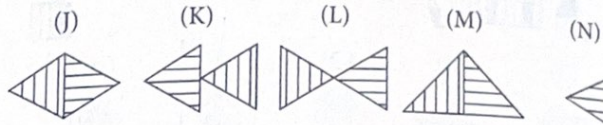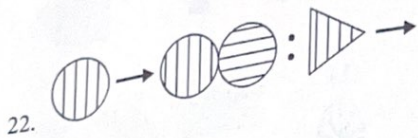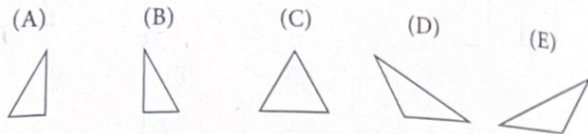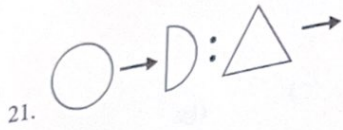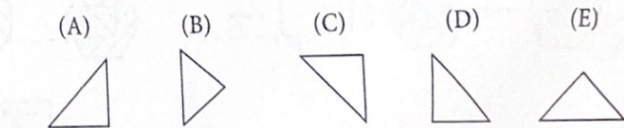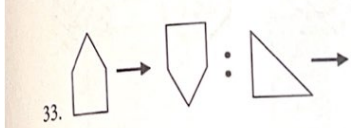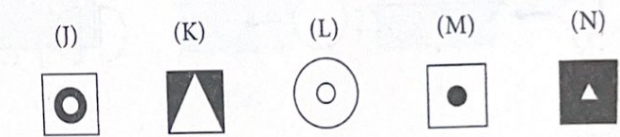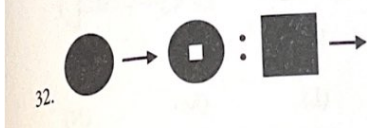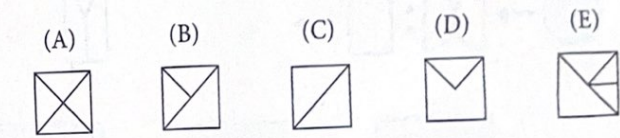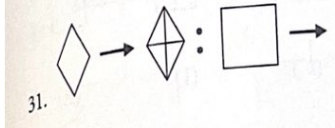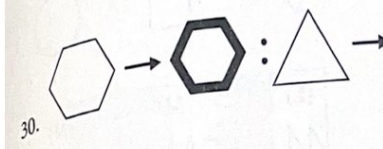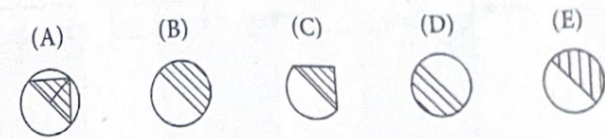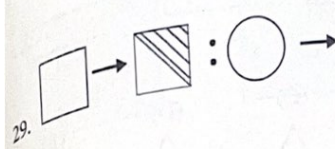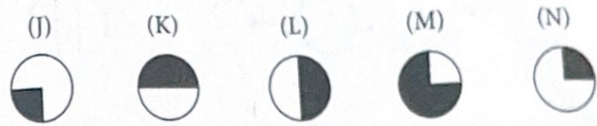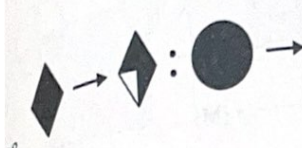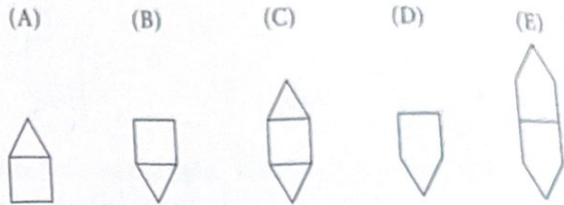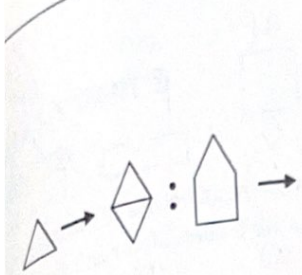
## ABILITY PART 2

**7 minutes**

**Directions:** The second figure shows a particular change from the first figure. Which answer choice shows the figure that would result if the same change is made to the third figure?
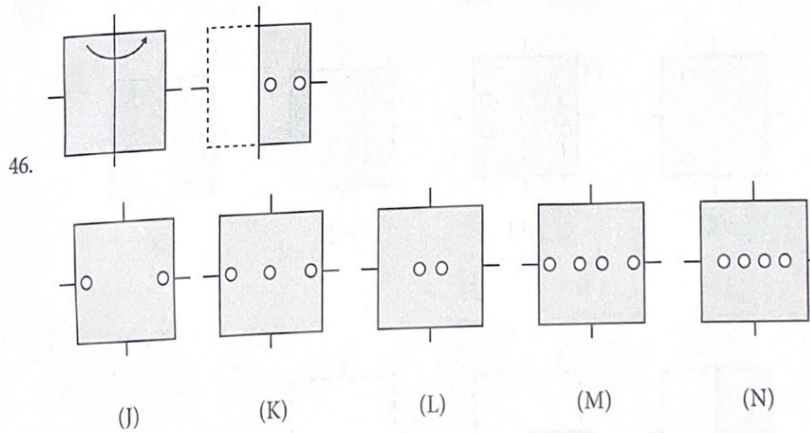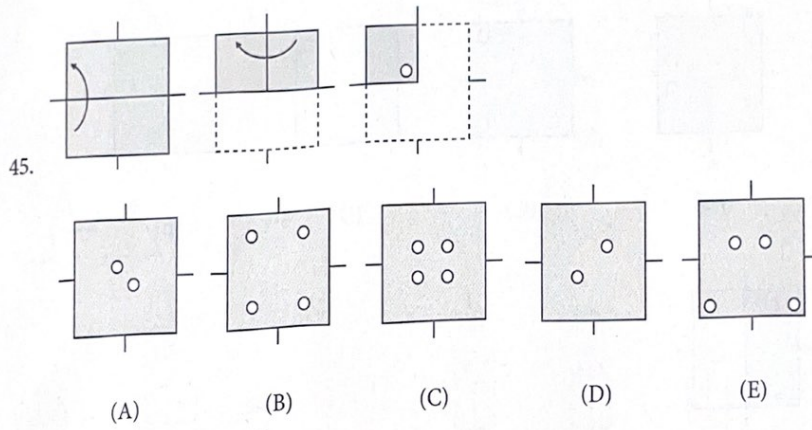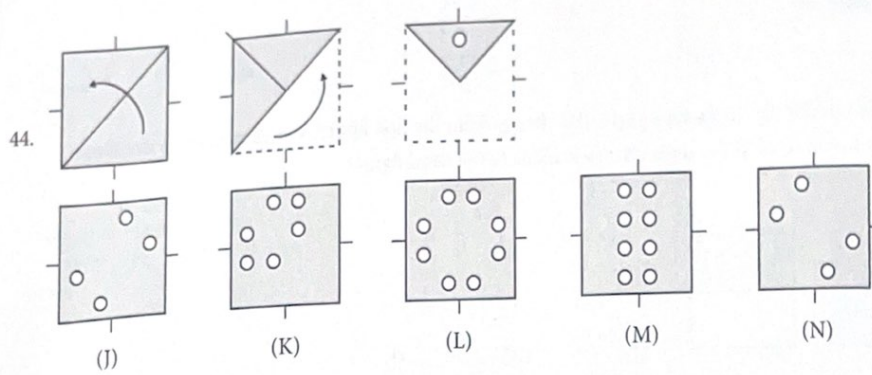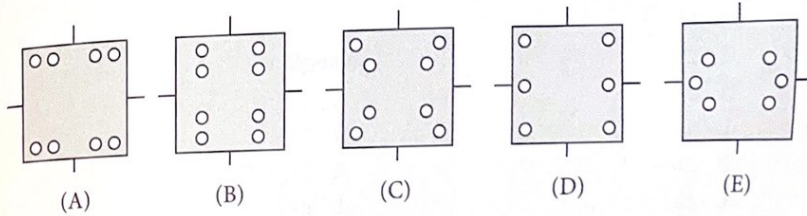
41.

(A)  (B)  (C)  (D)  (E)

42.

(J)  (K)  (L)  (M)  (N)

43.

(A)  (B)  (C)  (D)  (E)

44.

(J)   (K)   (L)   (M)   (N)

45.

(A)   (B)   (C)   (D)   (E)

46.

(J)   (K)   (L)   (M)   (N)

47.

(A)    (B)    (C)    (D)    (E)

48.

(J)    (K)    (L)    (M)    (N)

49.

(A)    (B)    (C)    (D)    (E)

50.



(J)          (K)          (L)          (M)          (N)