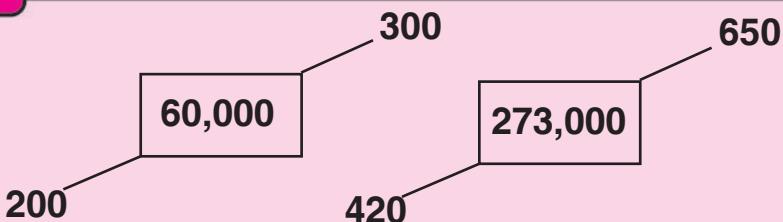


Exercise 1

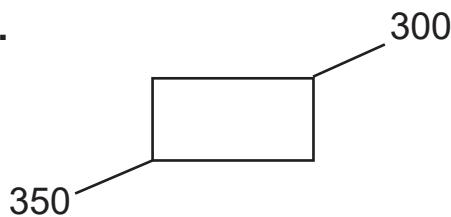
Date:



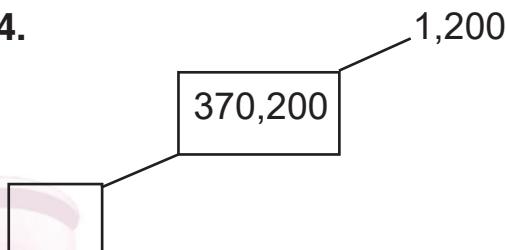
Example:



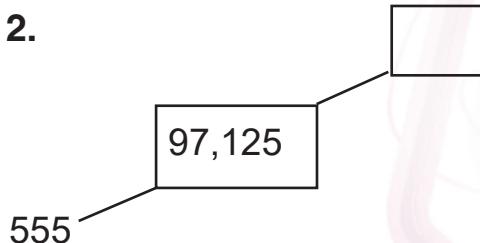
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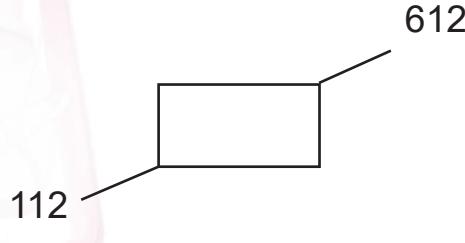
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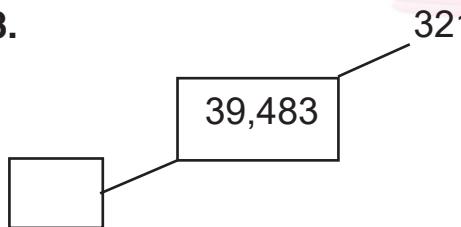
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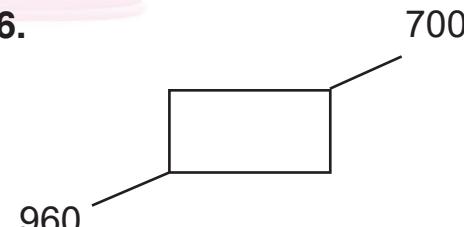
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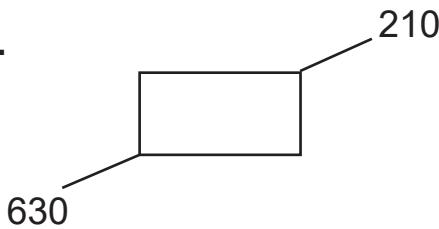
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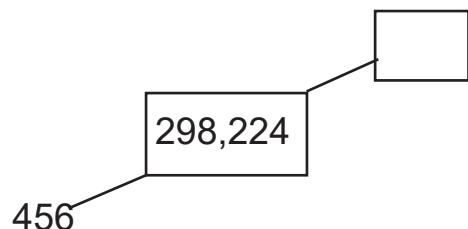
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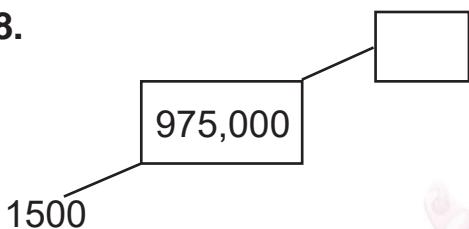
7.



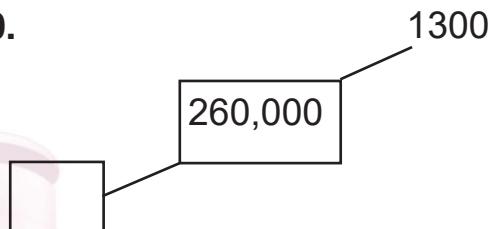
9.



8.



10.

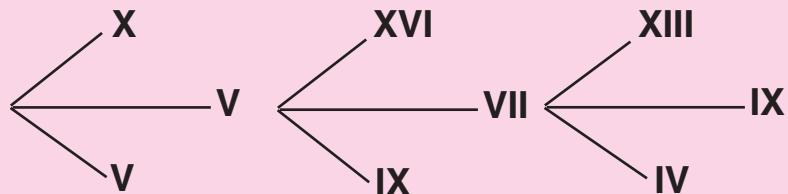


Exercise 2



Date:

Example:



1. XXX
XXII
2. L
X
3. XL
IV
4. V
IV
5. XXV
XV
6. LXX
XX
7. LV
VI
8. XLII
XIV
9. III
II
10. LXX
XLV

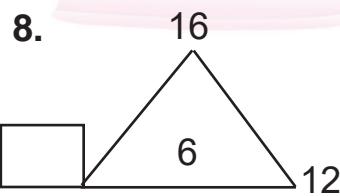
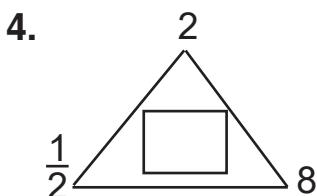
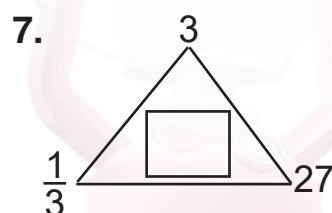
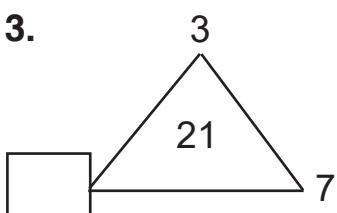
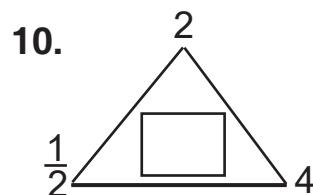
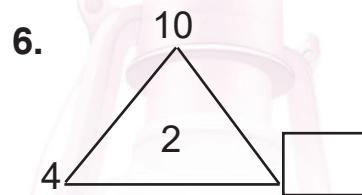
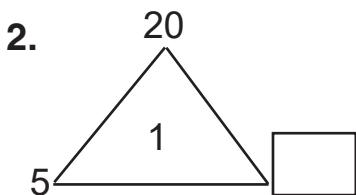
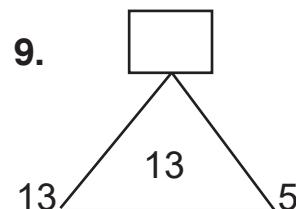
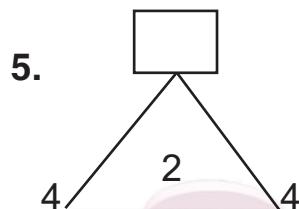
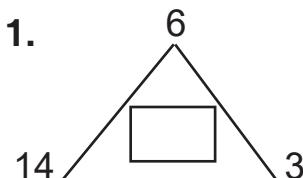
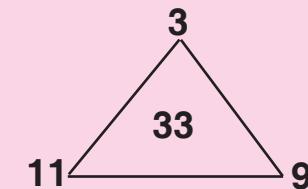
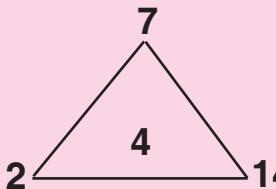
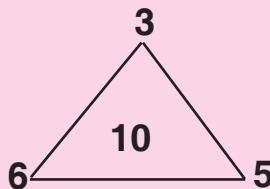


Exercise 3



Date:

Example:

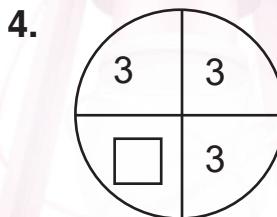
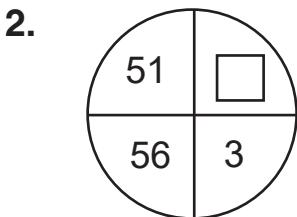
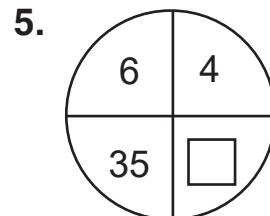
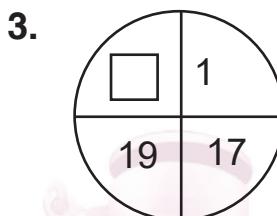
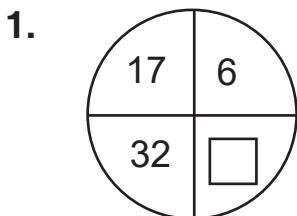
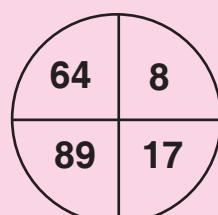
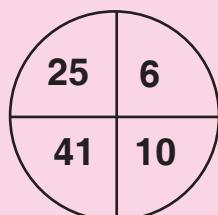
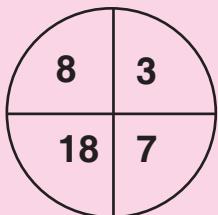


Exercise 4



Date:

A. Example:



Complete the following series:

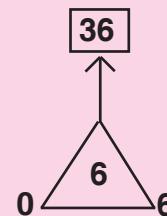
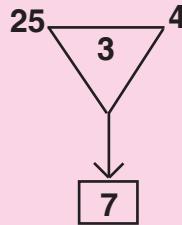
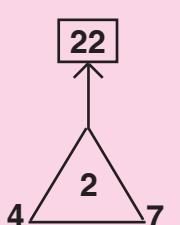
6. 2, 3, 5, 8, 12, 17, _____,
7. 195, 190, 185, 180, 175, 170, _____,
8. 91, 97, 103, 109, 115, 121, _____,
9. 197, 196, 194, 191, 187, 182, _____,
10. 3, 9, 15, 21, 27, 33, _____,



B. Example:

L M N P G R S U = 7 6 8 5 4 2 1 0

11. Write in figures: P N M _____
12. Write in letters 2 2 1 _____
13. Show the answer in figures: L U U - M U U _____
14. SUS x R. Show answer in figures _____
15. What is the value of $P - G$? _____
 $\overline{M + U}$

C. Example:

16. 36 _____
17. _____
18. 58 _____
19. 99 _____
20. 100 _____



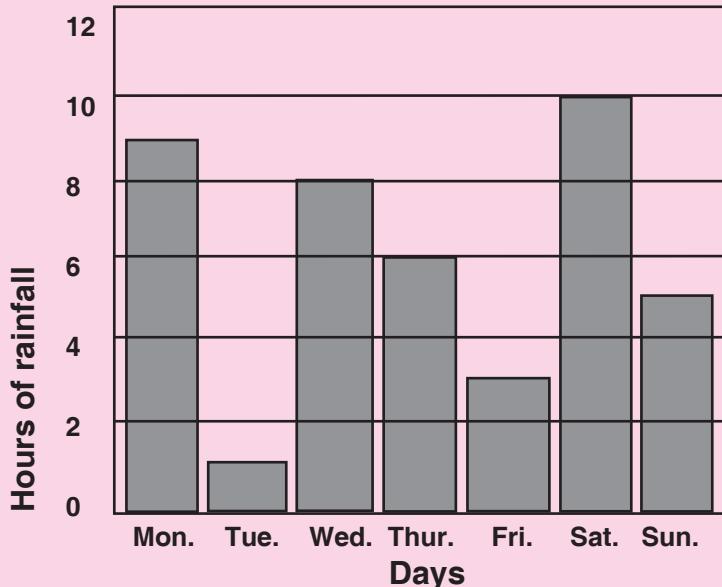


Date:

A. Example:

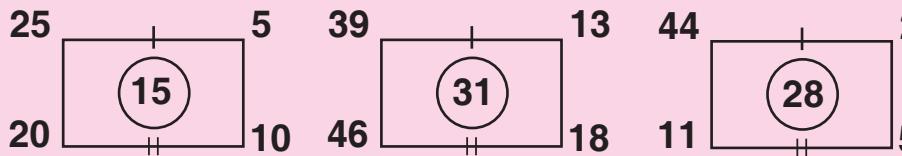


Below is a bar chart showing the number of hours of rainfall we had each day in the last week of July.



- 1 - 2. Which 2 days added together had the same amount of rainfall as Saturday? _____ and _____
3. There was sunshine on only one day in the week. On which day could this be? _____
- 4 - 6. On which 3 days together did the total rainfall equal that of Monday? _____, _____ and _____
7. How many days had fewer than 6 hours of rainfall? _____
8. How many days had more than 8 hours of rain fall? _____
9. What was the total hours of rainfall for the week? _____
10. Which day had the least rainfall? _____



B. Example:

11. $\begin{array}{|c|c|} \hline 30 & 6 \\ \hline \square & 15 \\ \hline 18 & \\ \hline \end{array}$

16. $\begin{array}{|c|c|} \hline \square & 4 \\ \hline 50 & 20 \\ \hline \square & \\ \hline \end{array}$

12. $\begin{array}{|c|c|} \hline 48 & \square \\ \hline 6 & 3 \\ \hline \square & \\ \hline \end{array}$

17. $\begin{array}{|c|c|} \hline 48 & 3 \\ \hline \square & 13 \\ \hline \square & \\ \hline \end{array}$

13. $\begin{array}{|c|c|} \hline 54 & 2 \\ \hline 27 & \\ \hline \square & \\ \hline \end{array}$

18. $\begin{array}{|c|c|} \hline 63 & 7 \\ \hline 35 & 20 \\ \hline \square & \\ \hline \end{array}$

14. $\begin{array}{|c|c|} \hline \square & 8 \\ \hline 24 & 16 \\ \hline \square & \\ \hline \end{array}$

19. $\begin{array}{|c|c|} \hline 169 & 13 \\ \hline 60 & \\ \hline \square & \\ \hline \end{array}$

15. $\begin{array}{|c|c|} \hline 144 & 12 \\ \hline \square & 1 \\ \hline \square & \\ \hline \end{array}$

20. $\begin{array}{|c|c|} \hline 36 & \square \\ \hline 18 & 12 \\ \hline \square & \\ \hline \end{array}$



Exercise 6



Date:

A. Example:



30,000

600

15,000

50

1.

20,000

500

40

6.

600

60,000

200

2.

21,000

700

60

7.

1,000,000

1000

1000

3.

90,000

300

300

8.

400,000

800

200,000

4.

100,000

250

50,000

9.

750

112,500

300

5.

200,000

100,000

100

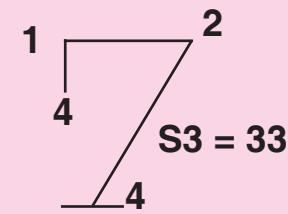
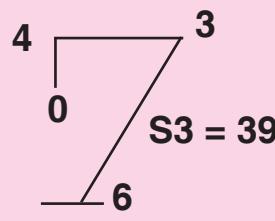
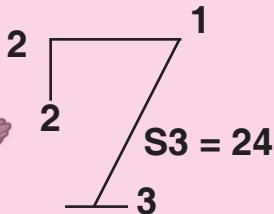
10.

630,000

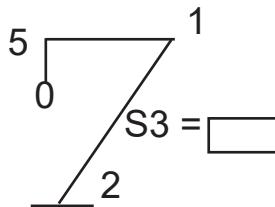
900

700

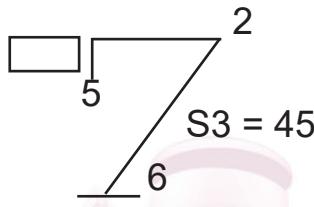


B. Example:

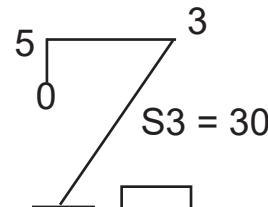
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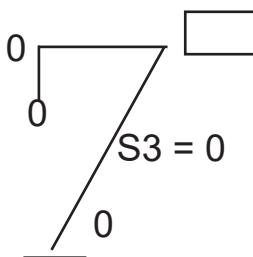
2.



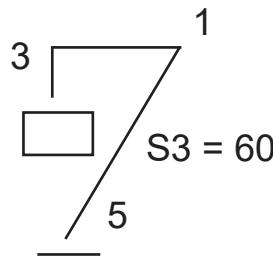
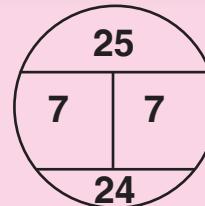
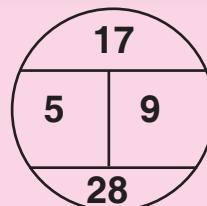
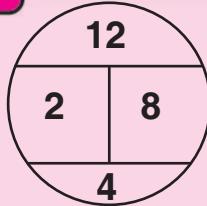
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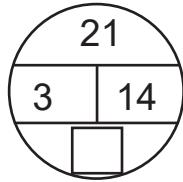
4.



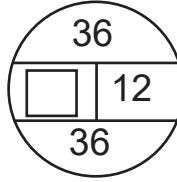
5.

**C. Example:**

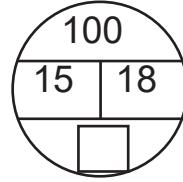
6.



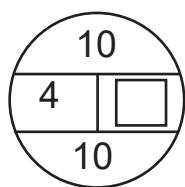
7.



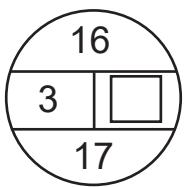
8.



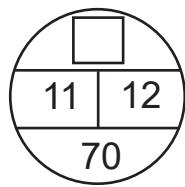
9.



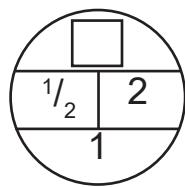
10.



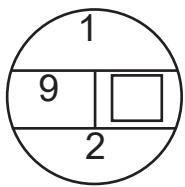
11.



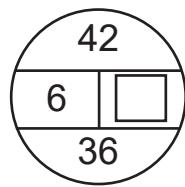
12.



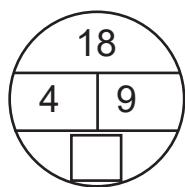
13.



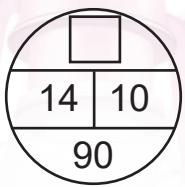
14.



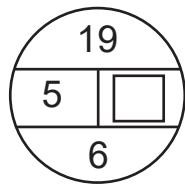
15.



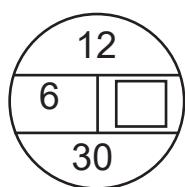
16.



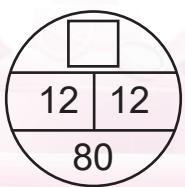
17.



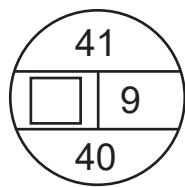
18.



19.



20.





A. Example:

0 1 2 3 4 5 6 7 8 9 are represented by
e f g h i j k l m n.

Express 2 6 9 in letters: g k n.

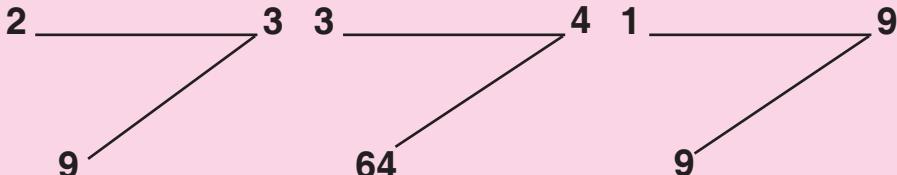
Express j n e in figures: 5 9 0.

1. Express 117 in letters _____.
2. Express $410 + 320$ in letters _____.
3. Which numbers are represented by the word 'men'?
4. Use figures to show nn : h _____.
5. Show in letters $62 + 3 \times 4$ _____.
6. Subtract jk from mn. Give answers in figures _____.
7. Show in figures gee : gj _____.
8. Add 709 and 10. Give answers in letters _____.
9. Multiply 24 by 9. Give answers in figures _____.
10. Write in letters 590 _____.
11. 9, 9, 13, 13, 17, _____.
12. 2, 2, 7, 7, 12, _____.
13. 15, 24, 33, _____.
14. 75, 73, 71, 69, _____.
15. 6, 7, 9, 12, _____.
16. 7, 12, 19, 28, _____.
17. Add together ten, thirty and nineteen _____.
18. 201, 199, 196, _____.
19. How many letters are in this question? _____.

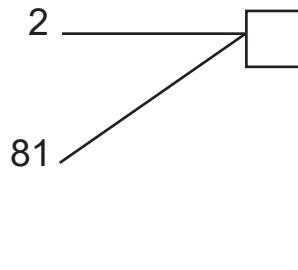


20. 27, 6, 33, 72, 50. Add up the first and last number _____.

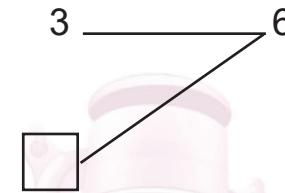
B. Example:



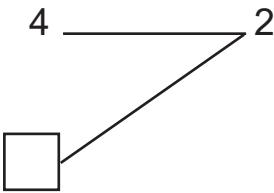
1.



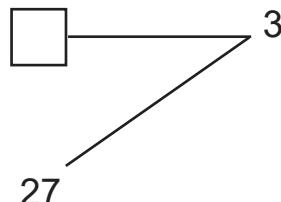
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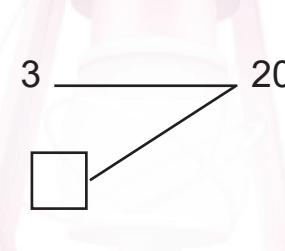
9.



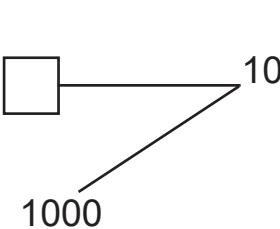
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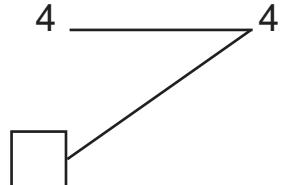
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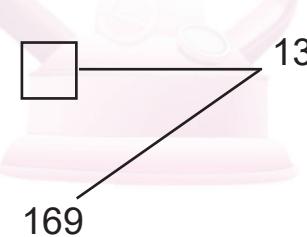
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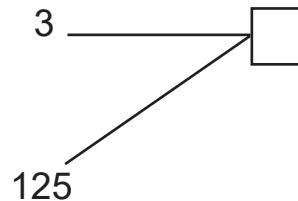
3.



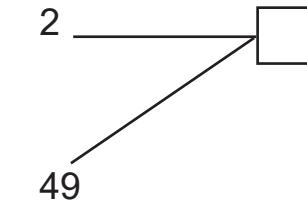
7.



4.



8.



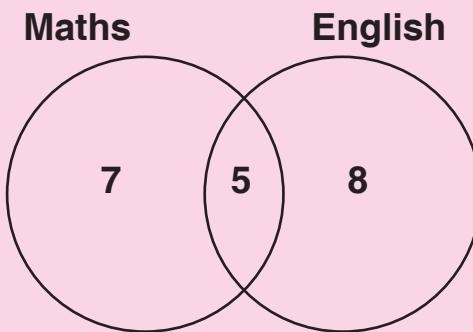
Venn diagrams are used to represent information. They can be drawn in any form i.e. in form of triangles, circles, squares, rectangles etc. It could also be a combination of these.

The languages used to ask questions in venn diagrams are: only, both/and, or. These languages are explained with the sample below.

C. Example:



This venn diagram represents the types of books brought by some kids in a class.



1. How many kids brought only English books?
Ans: 8
2. How many kids brought both English and Maths books?
= 5
3. How many kids brought either Maths or English books or both? $20 = (7 + 5 + 8)$.
4. How many kids are there altogether? = 20 i.e. $(7 + 5 + 8)$.
5. How many kids brought at least one book
 $= 7 + 5 + 8 = 20$

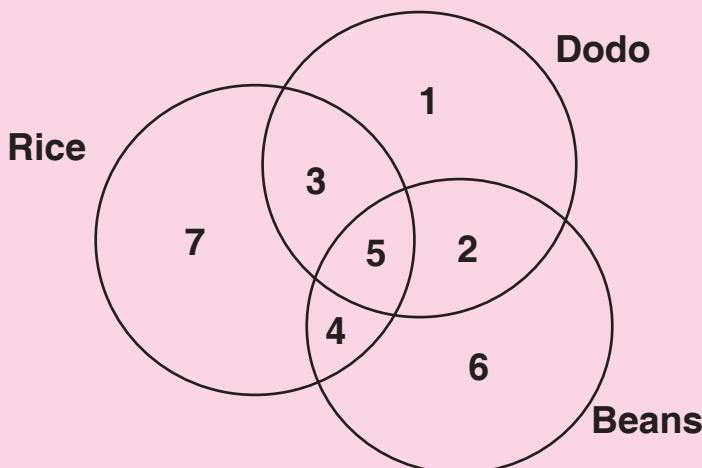




A. Example:

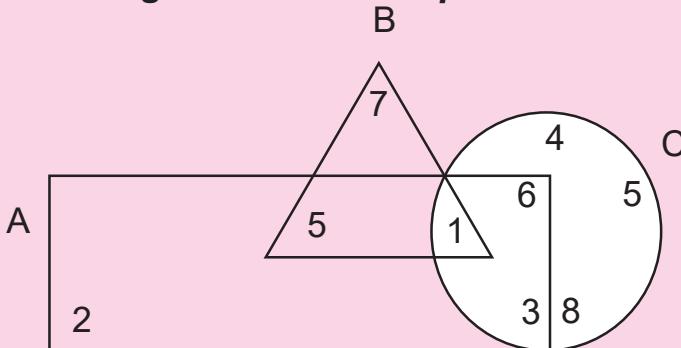


The diagram below represents the three major foods eaten in a house at Ikoyi and how many people eat a particular food item.



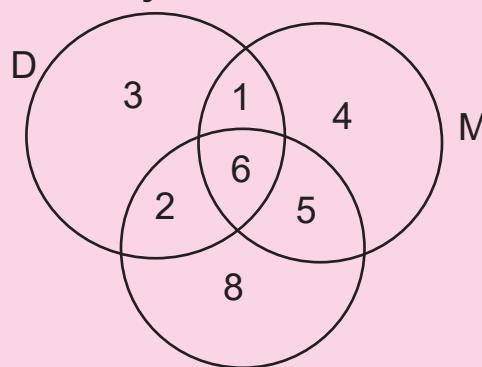
- How many people eat only **rice**? _____
- How many people eat all the three food items? _____
- How many people eat **rice**? _____
- How many people eat **rice** and **beans**? _____
- How many people eat only **dodo** and **beans**? _____
- How many people eat only one food item? _____
- How many people eat **rice** and **dodo**? _____
- How many people eat at least two types of food item? _____
- How many people eat **rice** and **beans** only? _____
- How many people are in the house altogether? _____



B. Example:*Use this diagram to answer questions 11 - 18:*

11. What numbers are in shape **A** and are not in **B**? _____
12. What numbers are in shape **C** and are not in **B**? _____
13. What number is in **B** alone? _____
14. Add all the numbers in shapes **C** and **B** together.
15. What numbers are in shape **C** and are not in **A**? _____
16. Multiply the numbers in shape **B** _____
17. Find the even numbers in the shapes. Add them up _____
18. Add the odd numbers in the shapes. Multiply your answer by 2.

The three circles below represent the different societies in a primary school. Circle **D** represents the Drama Society, circle **M** represents the Music Society, and circle **F** represents the French Society.

C. Example:*Study the diagram carefully, and use it to answer questions 19 - 24:*

19. Which area represents the children in Drama only? _____
20. Which areas represent the children who belong to both the French Society and Music Society? _____
21. Which area represents the children who belong to the three Societies? _____
22. Which areas represent the children who belong to the Drama and Music Societies but not to the French society? _____
23. Which area represents children in either the Drama Society or the French Society or both? _____
24. How many children belong to:
 (a) only the Drama Society, (b) only the Music Society,
 (c) only the French Society? Find the total.

D. Example:



Draw the shapes which complete the patterns in questions 25-30:

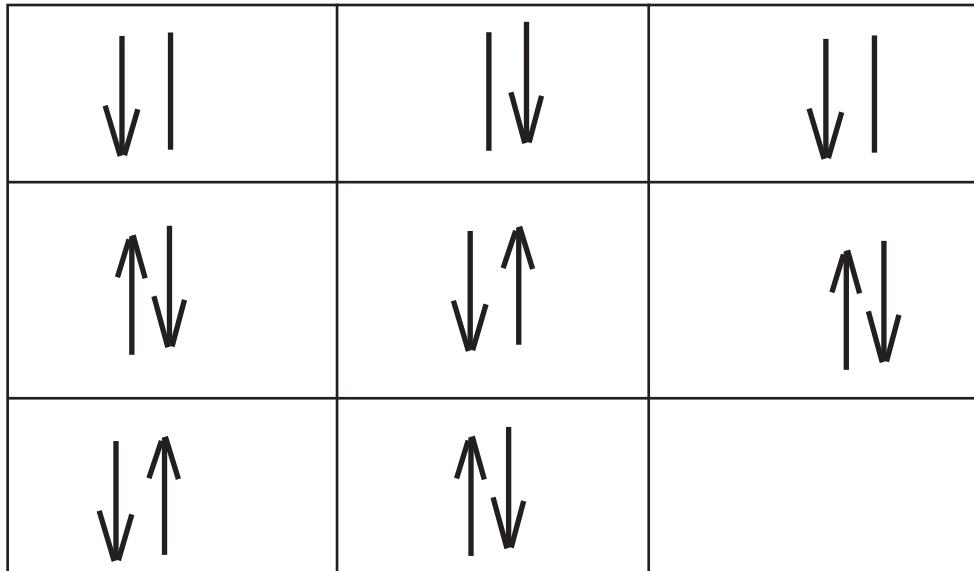
25.			

26.	C	S	V
	C		A

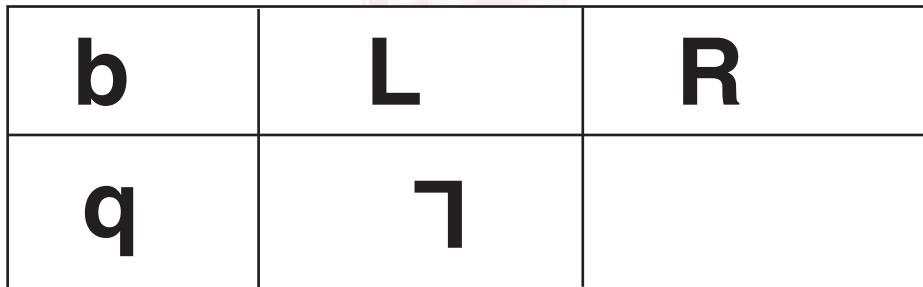
27.			



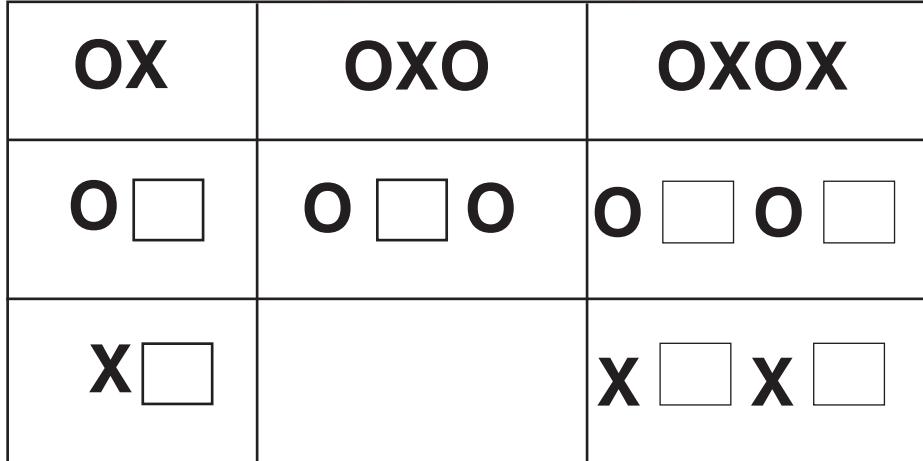
28.



29.



30.



Exercise 9



Date:

A. Example:



$$(9 \vee 8 \vee 4) = 21 \quad (10 \wedge 6 \wedge 4) = 0$$

$$(6 \vee 3 \wedge 4) = 5$$

1. What is $(12 \vee 2 \vee 3)$? _____
2. What is $(15 \wedge 4 \wedge 8)$? _____
3. What is $(8 \vee 2 \wedge 6)$? _____
4. $(15 \wedge 3 \vee 8)$ is _____
5. $(11 \vee 3 \square = 8)$ _____
6. $(14 = 7 \vee 3 \vee \square)$ _____
7. $(2 = 9 \wedge 4 \square)$ _____
8. $(6 \wedge 2 \vee \square = 11)$ _____
9. $(5 \vee 5 \wedge 5) =$ _____
10. $(6 \frac{1}{2} \vee 3 \frac{1}{2} \vee 9) =$ _____

B. Example:



$$(20d 5) = 4, \quad (16b 3) = 13, \quad (12b 3d 9) = 11\frac{2}{3}$$

11. What is the value of $(24d 8)$? _____
12. Find the answer $(33b 6d 2)$ _____
13. $(60d 12b 5)$ Find the answer _____
14. $72b \square = 48$ What number is missing? _____
15. $(144d 12b \square = 6)$ What number is missing? _____
16. $(36b 0d 4)$ Find the answer _____
17. $(72d 1d 2)$ What is the answer? _____



18. (24b 8b 7) Find the answer _____
 19. (70d 5b 2) What is the value? _____
 20. (11b 4d 4) Find the answer _____

C. Example:

5 . . 10

12 . 12

16 . . . 48

21. 14 . . . 26. 15 . . .
 22. 26 52 27. 45 .
 23. 17 . . . 28. . . . 27
 24. . . . 36 29. 8 24
 25. 10 50 30. 12 . . .

D. Example:
 $18 \mid\mid 27 \mid\mid 40\frac{1}{2} \quad 24 \mid\mid 36 \mid\mid 54 \quad 20 \mid\mid 30 \mid\mid 45$

31. 16 || 24 || ? 36. 12 || 18 || ?
 32. 4 || ? || 9 37. ? || 75 || 112 $\frac{1}{2}$
 33. 34 || 51 || ? 38. 48 || ? || 108
 34. 10 || 15 || ? 39. ? || 30 || 45
 35. ? || 126 || 189 40. 72 || 108 || ?

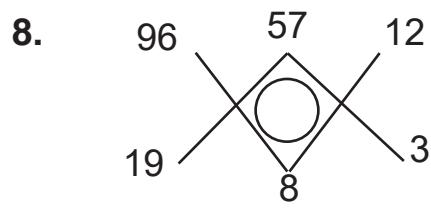
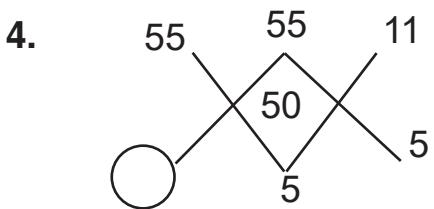
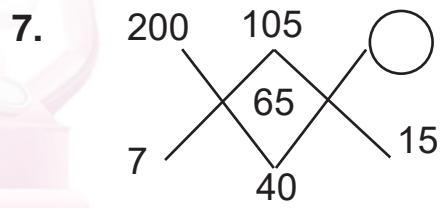
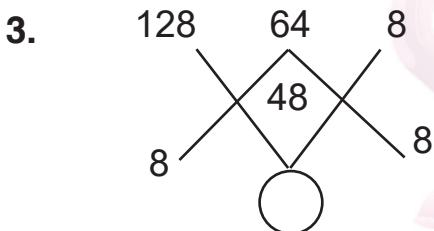
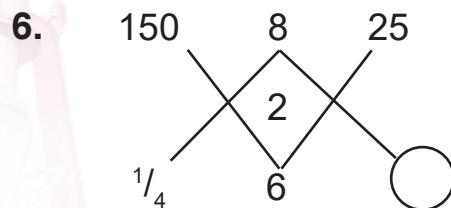
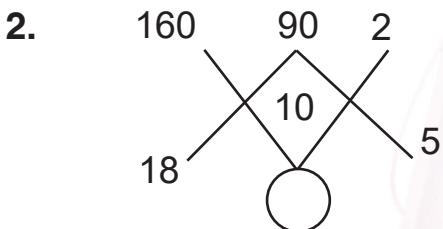
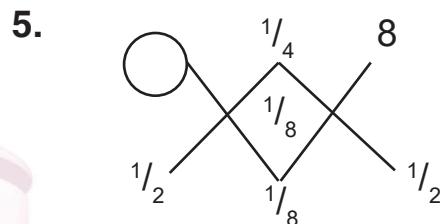
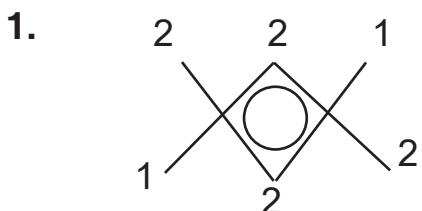
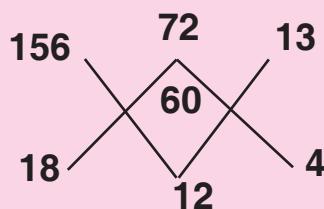
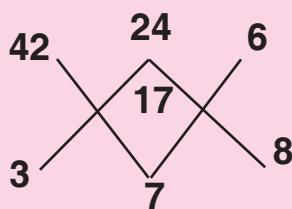


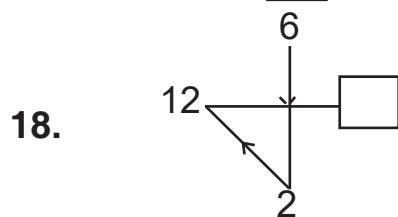
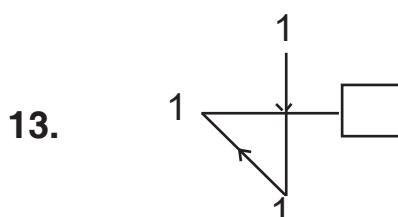
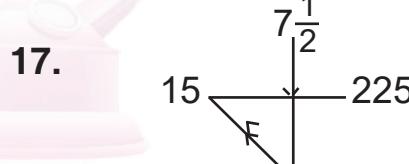
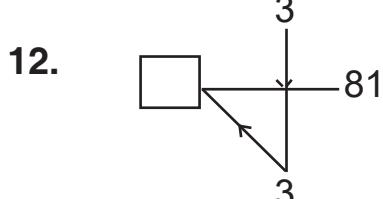
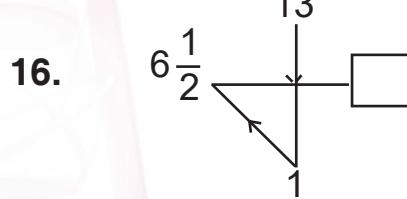
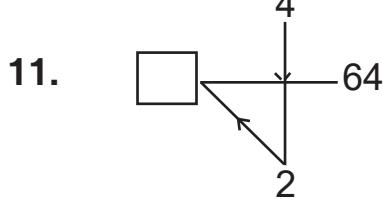
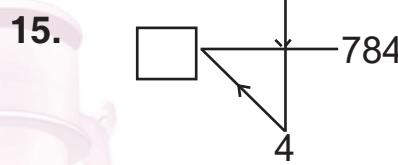
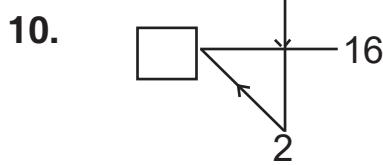
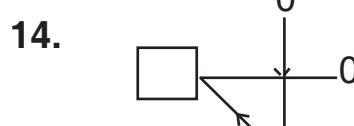
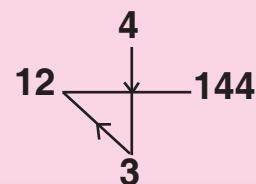
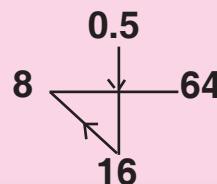
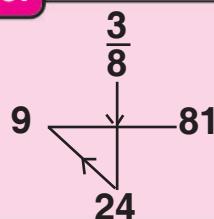
Exercise 10

Date:

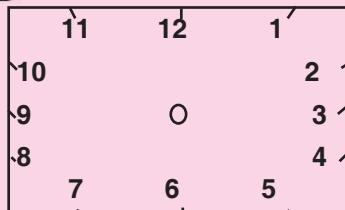


A. Example:



B. Example:

A. Example:



$$\begin{array}{r}
 9 + 2 = 11 \\
 11 + 4 = 3 \\
 7 - 6 = 1 \\
 2 - 3 = 11
 \end{array}$$

Use the diagram of the clock face to work out numbers 1 - 20:

- | | |
|------------------------------------|-------------------------------------|
| 1. $11 + 3 =$ <input type="text"/> | 11. $1 + 7 =$ <input type="text"/> |
| 2. $4 + 3 =$ <input type="text"/> | 12. $10 + 3 =$ <input type="text"/> |
| 3. $9 +$ <input type="text"/> = 2 | 13. $7 +$ <input type="text"/> = 4 |
| 4. $10 - 3 =$ <input type="text"/> | 14. $1 - 5 =$ <input type="text"/> |
| 5. $3 - 5 =$ <input type="text"/> | 15. $8 - 8 =$ <input type="text"/> |
| 6. $9 - 9 =$ <input type="text"/> | 16. $11 - 5 =$ <input type="text"/> |
| 7. $10 + 5 =$ <input type="text"/> | 17. $9 + 5 =$ <input type="text"/> |
| 8. $2 - 2 =$ <input type="text"/> | 18. $12 - 5 =$ <input type="text"/> |
| 9. $7 + 6 =$ <input type="text"/> | 19. $2 + 11 =$ <input type="text"/> |
| 10. $3 - 3 =$ <input type="text"/> | 20. $8 + 7 =$ <input type="text"/> |



B. Example:**Magic Box**

1	8	6
10	5	0
4	2	9

A.

x	6	5
8	4	z
3	y	7

(1) $x =$

(2) $y =$

(3) $z =$

D.

a	30	60
c	40	10
d	b	50

(14) $a =$

(15) $b =$

(16) $c =$

(17) $d =$

B.

6	1	8
7	y	z
2	x	4

(4) $x =$

(5) $y =$

(6) $z =$

E.

14	15	7
c	12	b
17	9	a

(18) $a =$

(19) $b =$

(20) $c =$

C.

5	y	9
x	6	2
3	8	z

(7) $x =$

(8) $y =$

(9) $z =$

F.

1	4	4
b	a	d
2	c	5

(10) $a =$

(11) $b =$

(12) $c =$

(13) $d =$



Exercise 12

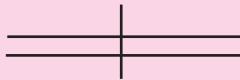
Date:



A. Example:

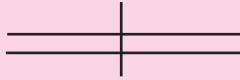


2:10



$\frac{2}{10}$

2:7



$\frac{2}{7}$

1:5



$\frac{1}{5}$

1. $5:8 = \frac{\square}{\square}$

6. $\frac{\square}{\square} = \frac{10}{12}$

2. $\frac{\square}{\square} = \frac{1}{11}$

7. $6:13 = \frac{\square}{\square}$

3. $\frac{\square}{\square} = \frac{1}{2}$

8. $\frac{\square}{\square} = \frac{9}{10}$

4. $3:4 = \frac{\square}{\square}$

9. $2:3 = \frac{\square}{\square}$

5. $\frac{\square}{\square} = \frac{5}{6}$

10. $3:8 = \frac{\square}{\square}$



B. Example:

$$\begin{array}{c} 9 \\ | \\ 4 \end{array} \quad \begin{array}{c} 25 \\ | \\ 34 \end{array}$$

$$\begin{array}{c} 4 \\ | \\ 2 \end{array} \quad \begin{array}{c} 4 \\ | \\ 8 \end{array}$$

$$\begin{array}{c} 25 \\ | \\ 0 \end{array} \quad \begin{array}{c} 625 \\ | \\ 650 \end{array}$$

11. $\begin{array}{c} 81 \\ | \\ 64 \end{array} \quad \boxed{} \quad \boxed{}$
370

15. $\boxed{} \quad \begin{array}{c} 121 \\ | \\ 25 \end{array} \quad 157$

19. $\begin{array}{c} 9 \\ | \\ 9 \end{array} \quad 0 \quad \boxed{}$

12. $\boxed{} \quad \begin{array}{c} 169 \\ | \\ 36 \end{array} \quad 218$

16. $\begin{array}{c} 36 \\ | \\ \boxed{} \end{array} \quad \begin{array}{c} 121 \\ | \\ 157 \end{array}$

20. $\begin{array}{c} 16 \\ | \\ 4 \end{array} \quad \boxed{} \quad 160$

13. $\begin{array}{c} 25 \\ | \\ 16 \end{array} \quad \boxed{}$
106

17. $\boxed{} \quad \begin{array}{c} 361 \\ | \\ 81 \end{array} \quad 461$

14. $\begin{array}{c} 9 \\ | \\ 0 \end{array} \quad \boxed{}$
81

18. $\begin{array}{c} 64 \\ | \\ \boxed{} \end{array} \quad \begin{array}{c} 225 \\ | \\ 289 \end{array}$



Exercise 13

Date:



A. Example:



7	9
5	12
4	15
3	21

12	24
5	36
13	15
8	39

1.

7	45
9	<input type="text"/>
42	27
15	21

5.

17	360
20	45
15	60
<input type="text"/>	51

9.

17	33
75	75
25	225
11	<input type="text"/>

2.

16	54
10	45
<input type="text"/>	30
18	48

6.

13	27
<input type="text"/>	33
11	36
9	39

10.

40	<input type="text"/>
10	18
6	30
7	120

3.

10	210
<input type="text"/>	126
42	180
70	30

7.

50	60
41	99
33	123
20	<input type="text"/>

4.

18	48
<input type="text"/>	45
15	24
16	54

8.

9	45
3	24
<input type="text"/>	9
15	27

Score: _____



B. Example:



3	2	2
5	4	

7	5	11
9	8	

11.

15	5	
7	3	

16.

	1	
3	2	5

12.

	3	2
16	100	

17.

1.2	6	
0.5	5	

13.

$\frac{1}{2}$	$\frac{2}{5}$	$\frac{17}{100}$
$\frac{1}{5}$		

18.

3		6
3	4	

14.

21		18
3	4	

19.

14	4	
15	5	

15.

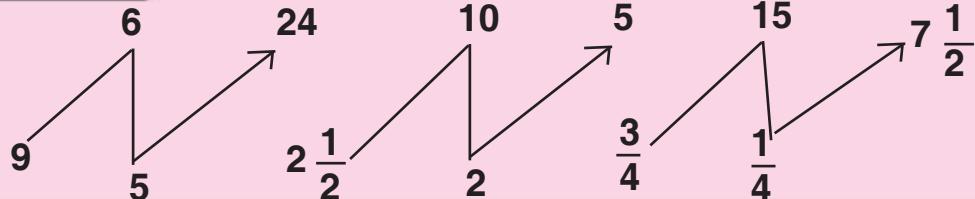
35	2	1
	1	

20.

35	12	
9		137



C. Example:

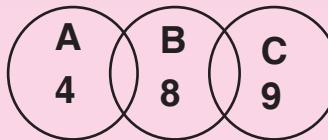


- 21.
- $$\begin{array}{c} 14 \\ \diagdown \quad \diagup \\ 2 \quad \boxed{} \end{array}$$
- 22.
- $$\begin{array}{c} 1 \\ \diagdown \quad \diagup \\ 8 \quad 8 \\ \boxed{} \end{array}$$
- 23.
- $$\begin{array}{c} 21 \\ \diagdown \quad \diagup \\ 6 \quad 3 \\ \boxed{} \end{array}$$
- 24.
- $$\begin{array}{c} 49 \\ \diagdown \quad \diagup \\ 15 \quad \boxed{} \\ 7 \end{array}$$
- 25.
- $$\begin{array}{c} 48 \\ \diagdown \quad \diagup \\ \boxed{} \quad 7 \\ 16 \end{array}$$
- 26.
- $$\begin{array}{c} 2 \\ \diagdown \quad \diagup \\ 66 \quad 55 \\ \boxed{} \end{array}$$
- 27.
- $$\begin{array}{c} 8 \\ \diagdown \quad \diagup \\ 12 \quad 7 \\ \boxed{} \end{array}$$
- 28.
- $$\begin{array}{c} 12 \\ \diagdown \quad \diagup \\ 19 \quad \boxed{} \\ 4 \end{array}$$
- 29.
- $$\begin{array}{c} 36 \\ \diagdown \quad \diagup \\ \boxed{} \quad 6 \\ 6 \end{array}$$
- 30.
- $$\begin{array}{c} 9 \\ \diagdown \quad \diagup \\ 5 \quad 4 \\ \boxed{} \end{array}$$





A. Example:



$$A^2 = 4 \times 4 = 16$$

$$B^2 = 8 \times 8 = 64$$

$$C^2 = 9 \times 9 = 81$$

1. What is the sum of C^2 and B^2 ? _____

2. What is the sum of figures A^2 and C^2 ? _____

3. Add B^2 and C^2 then subtract A^2 _____

4. Multiply B^2 by 7 and divide by 4 _____

5. Add C^2 , B^2 and A^2 . Multiply by 12 _____

6. Subtract 50 from the sum of C^2 and A^2 _____

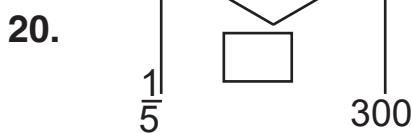
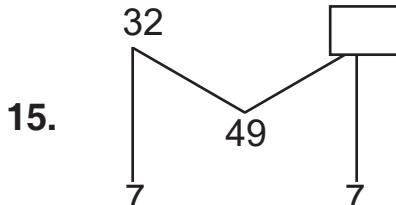
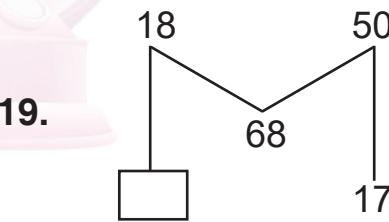
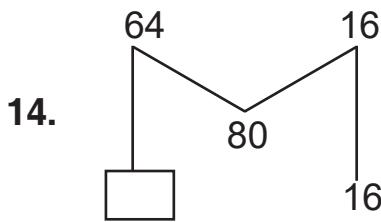
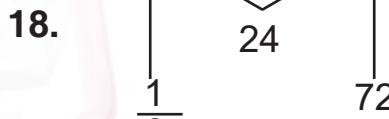
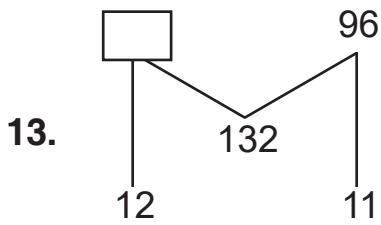
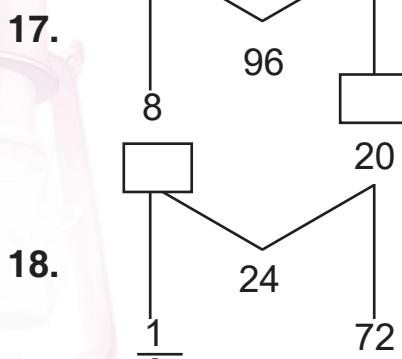
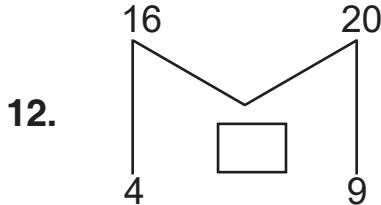
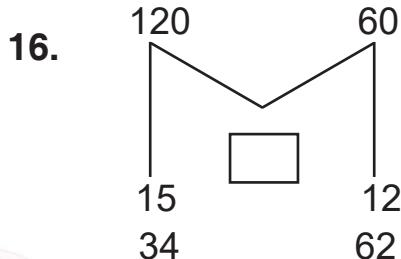
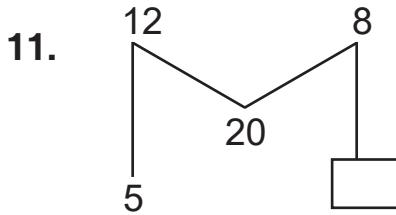
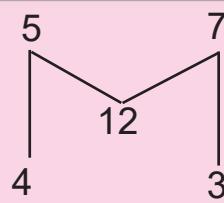
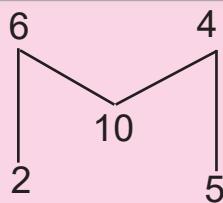
7. Find the sum of twice A^2 , thrice B^2 , C^2 _____

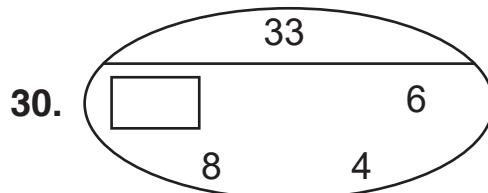
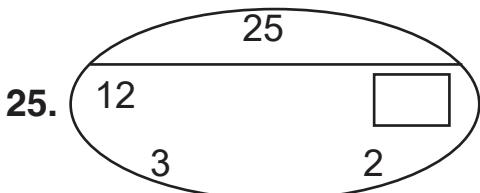
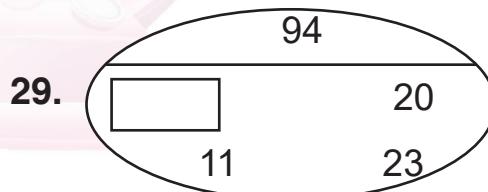
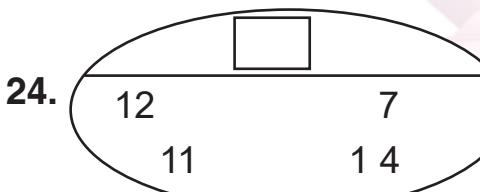
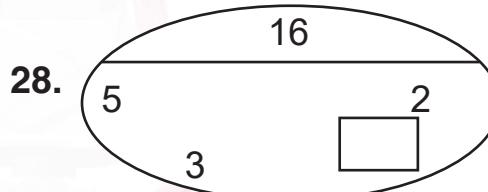
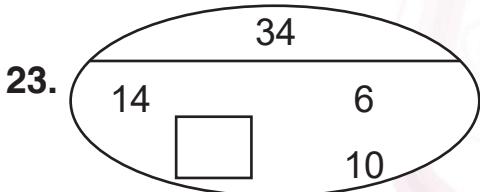
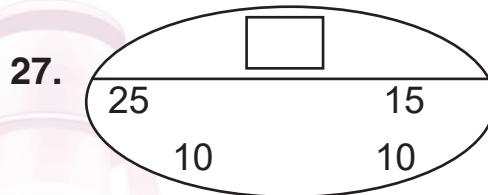
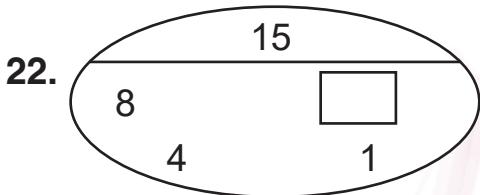
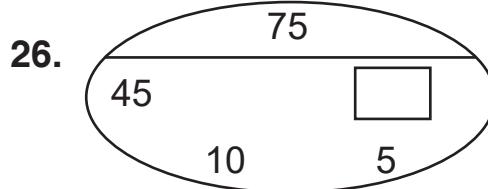
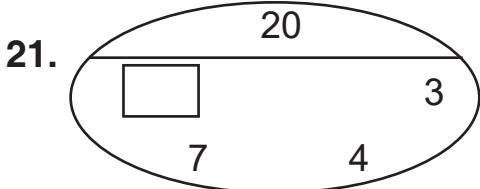
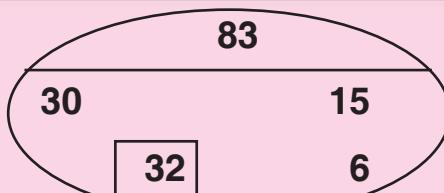
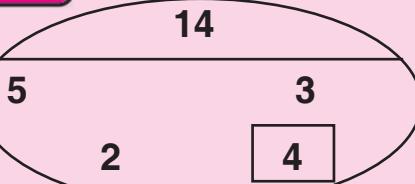
8. Add A^2 , B^2 , and C^2 _____

9. Divide B^2 by 2 and A^2 by 4. Add the sum _____

10. $4 \times A^2$, $8 \times B^2$ and $9 \times C^2$. Add up the sum _____



B. Example:

C. Example:

Exercise 15

Date:



A. Example:



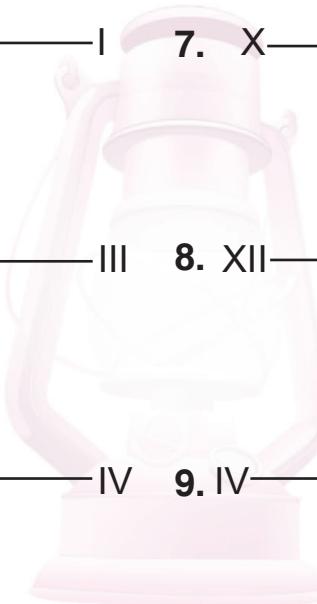
1. V — — II 6. IX — — II

2. IX — — I 7. X — — IV

3. III — — III 8. XII — — III

4. IV — — IV 9. IV — — III

5. IV — — V 10. X — — V



B. Example:

$$4 \boxed{S}^{24} \quad 18 \boxed{S}^{54} \quad 16 \boxed{S}^{64}$$

$Q = 6 \quad Q = 3 \quad Q = 4$

1.

$$\frac{1}{2} \boxed{S}^{16}$$

$Q = \boxed{}$

6.

$$\boxed{S}^{\frac{1}{4}}$$

$Q = \frac{1}{8}$

2.

$$\boxed{S}^{1.8}$$

$Q = 0.9$

7.

$$96 \boxed{S}^{\boxed{}}$$

$Q = \frac{1}{8}$

3.

$$1 \boxed{S}^{\boxed{}}$$

$Q = 15$

8.

$$14 \boxed{S}^{42}$$

$Q = \boxed{}$

4.

$$14 \boxed{S}^7$$

$Q = \boxed{}$

9.

$$\boxed{S}^{84}$$

$Q = 12$

5.

$$\boxed{S}^{\frac{2}{5}}$$

$Q = 1$

10.

$$13 \boxed{S}^{91}$$

$Q = \boxed{}$



Exercise 16



Date:

A. Example:



$$\begin{array}{c} 4 \\ \times 3 \\ \hline 32 \end{array}$$

$$\begin{array}{c} 12 \\ \times 12 \\ \hline 312 \end{array}$$

$$\begin{array}{c} 9 \\ \times 8 \\ \hline 162 \end{array}$$

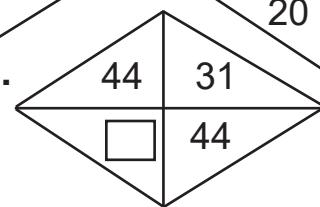
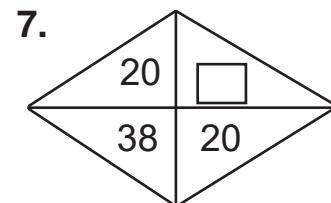
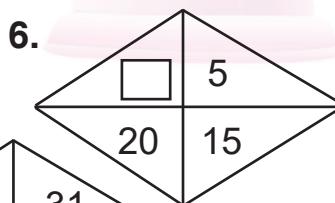
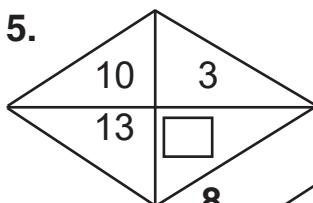
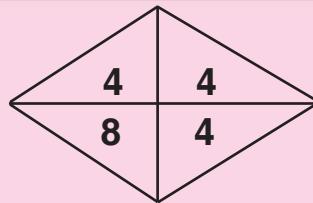
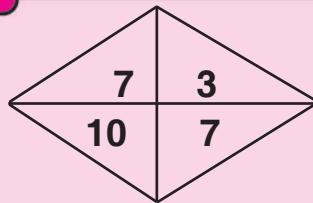
1. $\begin{array}{c} 22 \\ \times \square \\ \hline 512 \end{array}$

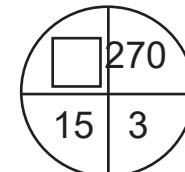
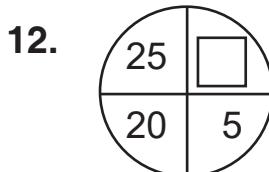
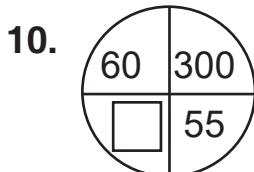
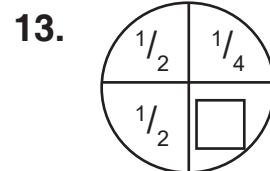
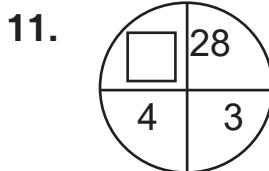
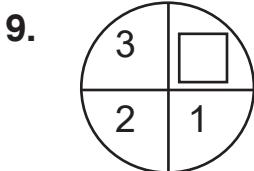
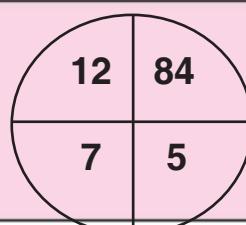
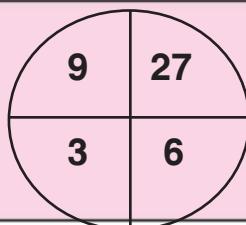
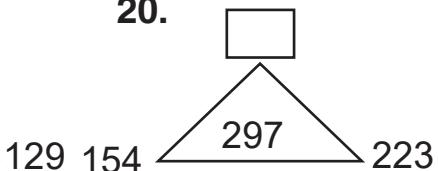
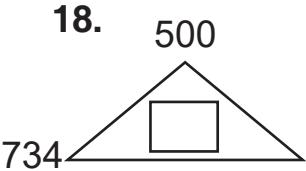
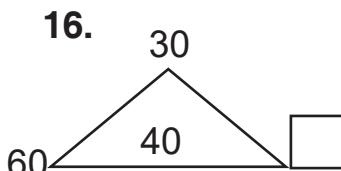
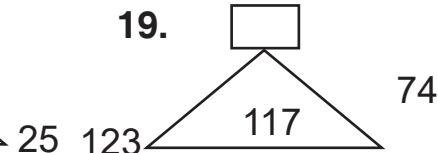
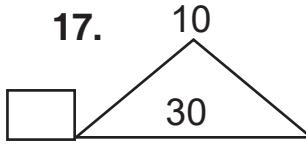
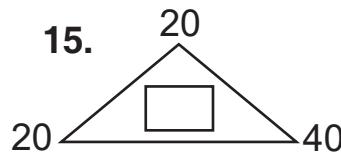
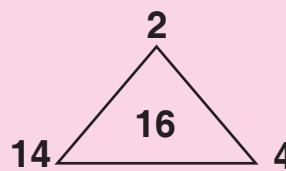
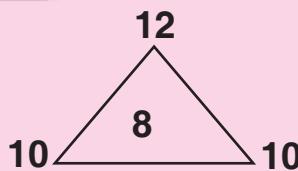
2. $\begin{array}{c} \square \\ \times 6 \\ \hline 152 \end{array}$

3. $\begin{array}{c} 9 \\ \times 7 \\ \hline \square \end{array}$

4. $\begin{array}{c} \square \\ \times 17 \\ \hline 438 \end{array}$

B. Example:



C. Example:**D. Example:**

Exercise 17



Date:

A. Example:



1.



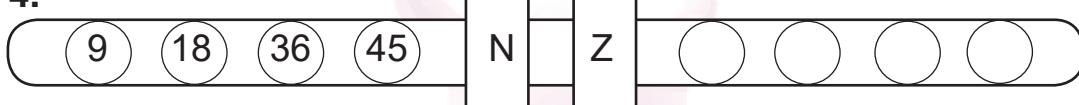
2.



3.



4.



5.



B. Example:

$$\begin{array}{rcccl}
 4 & \wedge & 2 & = & 16 \\
 36 & \vee & 3 & = & 12 \\
 3 & \wedge & 3 & = & 27
 \end{array}$$

6. $64 \quad V \quad 8 = ?$ A. 6 B. 4 C. 8 D. 24 E. 56
 7. $? \quad \wedge \quad 2 = 9$ A. 2 B. 3 C. 5 D. 4 E. 1
 8. $? \quad \wedge \quad 3 = 125$ A. 4 B. 2 C. 6 D. 5 E. 3
 9. $1 \quad \wedge \quad 4 = ?$ A. 1 B. 2 C. 4 D. 6 E. 5
 10. $30 \quad V \quad ? = 5$ A. 25 B. 3 C. 5 D. 6 E. 10

C. Example:

If AUDITORIUM is represented by 1 2 3 4 5 6 7 4 2 8,
then answer questions 11- 15.

11. What number represents D R U M in code?
 A. 3782 B. 3827 C. 3278 D. 3728 E. 3287
12. What does '671567' represent?
 A. ODATOR B. MARATO C. AUDITOR
 D. ROATOR E. ORATOR
13. How will you write 'TRAITOR' in code?
 A. 5741576 B. 5714576 C. 5714567
 D. 5714657 E. 5741567
14. What is 'MOTOR' in code?
 A. 86567 B. 86756 C. 87656
 D. 85676 E. 86565
15. Which word does '7465' represent?
 A. ROIT B. RIOT C. TOIR
 D. TORM E. RIOM



Exercise 18

Date:



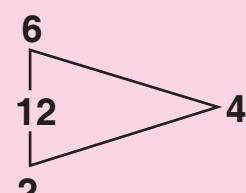
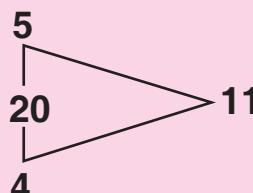
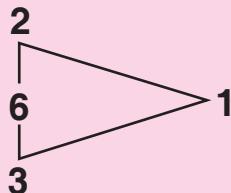
A. Example:

Study the examples and answer the questions under each example:

$$4(3)2 = \frac{12}{6} = 2 \quad 8(5)4 = \frac{40}{20} = 2 \quad 10(2)2 = \frac{20}{4} = 5$$

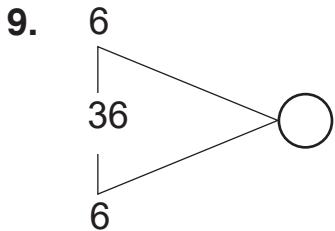
1. $5(1)? = 5$ A. 4 B. 5 C. 1 D. 6 E. 8
2. $?(4)2 = 6$ A. 12 B. 15 C. 9 D. 11 E. 10
3. $11(1)? = 1$ A. 2 B. 11 C. 4 D. 3 E. 6
4. $24(3)3 = ?$ A. 72 B. 30 C. 24 D. 8 E. 9
5. $15(4)5 = ?$ A. 3 B. 4 C. 7 D. 9 E. 6

B. Example:

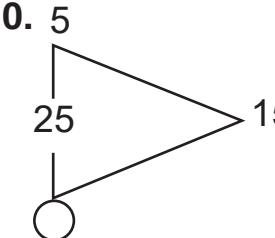


6.
A. 11 B. 16 C. 15
D. 17 E. 39
7.
A. 4 B. 2 C. 8
D. 6 E. 5
8.
A. 9 B. 12 C. 15
D. 10 E. 18





- A. 12
B. 24
C. 20
D. 32
E. 18



- A. 25
B. 5
C. 15
D. 20
E. 10

C. Example:



$$5 \parallel 4 = 9 \quad 2 \mid 3 = 6 \quad 16 \parallel 4 = 4$$

11. $5 \parallel 10 \parallel 2 = ?$ A. $7\frac{1}{2}$ B. 10 C. 25 D. 15 E. 30

12. $? \parallel 6 \mid 4 = 25$ A. 15 B. 10 C. 1 D. 0 E. 2

13. $32 \parallel \mid 4 \parallel 2 = ?$ A. 10 B. 38 C. 98 D. 4 E. 6

14. $\frac{1}{2} \mid ? = 8$ A. 14 B. 16 C. 10 D. 12 E. 8

15. $? \parallel \mid 5 = 8$ A. 30 B. 40 C. 20 D. 50 E. 60

D. Complete the following number series:

16. $4 : 6, 6 : 8, 8 : 10, 10 : 12, \underline{\hspace{2cm}} : \underline{\hspace{2cm}}$
A. 8 : 8 B. 12 : 12 C. 13 : 13 D. 12 : 14 E. 11 : 11

17. $8, 3, 9, 4, 10, 5, \underline{\hspace{2cm}}, \underline{\hspace{2cm}}$
A. 6, 11 B. 12, 12 C. 13, 13 D. 11, 6 E. 11, 11

18. $2 : 8, 6 : 24, 18 : 72, \underline{\hspace{2cm}} : \underline{\hspace{2cm}}$
A. 54 : 216 B. 22 : 96 C. 36 : 144 D. 216 : 54 E. 54 : 206

19. $\frac{7}{8}, \frac{1}{2}, \frac{1}{2}, \underline{\hspace{2cm}}$ A. 14, 7 B. 7, 1 C. 7, 14 D. 7, 7 E. 7, 21

20. $30, 12, 45, 10, 60, 8, \underline{\hspace{2cm}}, \underline{\hspace{2cm}}$.
A. 75, 8 B. 75, 6 C. 75, 4 D. 75, 5 E. 75, 10



Exercise 19



Date:

A. Example:



4	3	
5	9	8
3	7	6
2	6	5

3	5	
4	7	9
8	11	13
10	13	15

7	4	
1	8	5
3	10	7
4	11	8

1.

1	5	
2	3	7
12	13	(?)
8	9	13

- A. 7
- B. 60
- C. 17
- D. 19
- E. 15

2.

5	4	
2	7	8
9	14	13
6	(?)	10

- A. 20
- B. 8
- C. 16
- D. 9
- E. 11

3.

?	3	
11	20	14
13	22	16
17	26	20

- A. 7
- B. 60
- C. 17
- D. 9
- E. 15

4.

7	(?)	
4	11	9
8	15	13
6	13	11

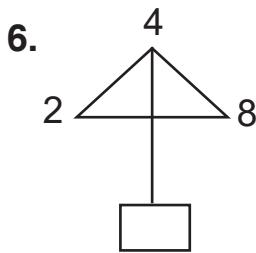
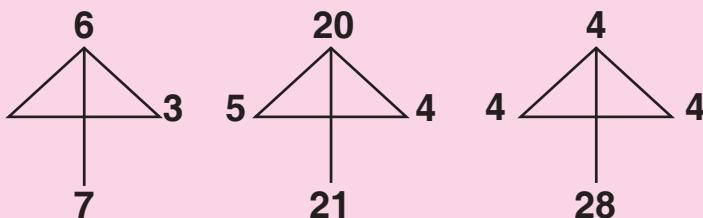
- A. 15
- B. 10
- C. 5
- D. 6
- E. 9

5.

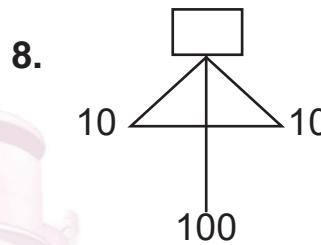
7	17
14	24
12	22
(?)	10

- A. 0
- B. 23
- C. 7
- D. 24
- E. 17

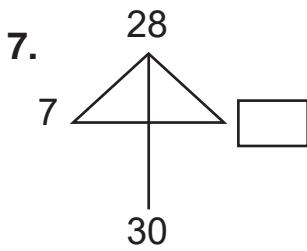


B. Example:

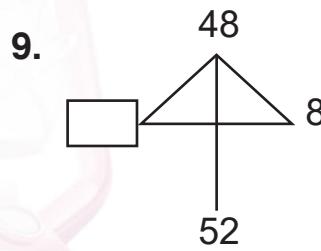
- A. 16
B. 64
C. 28
D. 54
E. 6



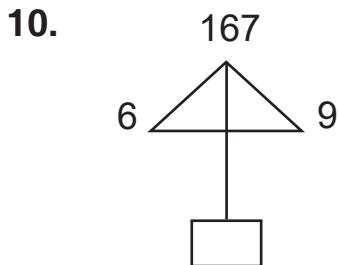
- A. 10
B. 20
C. 50
D. 150
E. 100



- A. 5
B. 10
C. 4
D. 3
E. 12



- A. 6
B. 8
C. 100
D. 9
E. 12



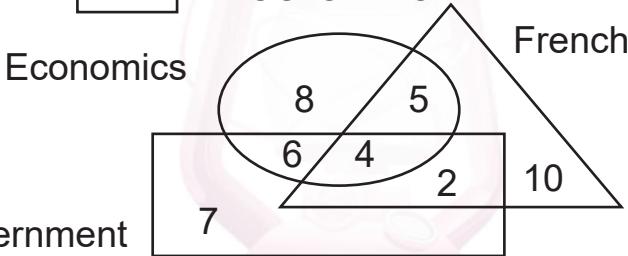
- A. 45
B. 63
C. 50
D. 25
E. 96



C. Complete the following series:

11. $\frac{9}{8}, \frac{8}{7}, \frac{7}{6}, \underline{\hspace{2cm}}$.
 A. $\frac{6}{7}$ B. $\frac{6}{5}$ C. $\frac{5}{6}$ D. $\frac{5}{4}$ E. $\frac{4}{3}$
12. 2, 6, 18, 54, .
 A. 162 B. 104 C. 216 D. 60 E. 172
13. 8, 3, 9, 4, 10, 5, .
 A. 12 B. 10 C. 11 D. 6 E. 7
14. 6 : 7, 8 : 10, 10 : 13, 12 : 16, .
 A. 13:19 B. 15:18 C. 18:21 D. 14:19 E. 17:20
15. 30, 12, 45, 10, 60, 8, .
 A. 6 B. 90 C. 4 D. 75 E. 90

In a school, some students offer **Economics**, **French** and **Government**. If is for those who offer **Economics**, for **French** and for **Government** as shown below:



16. How many students offer both Economics and Government?
 A. 8 B. 6 C. 5 D. 2 E. 21
17. How many students offer all the three subjects?
 A. 7 B. 10 C. 4 D. 5 E. 8
18. How many students offer only French?
 A. 10 B. 8 C. 7 D. 4 E. 21
19. How many students are there altogether?
 A. 41 B. 42 C. 43 D. 40 E. 39
20. How many students offer Economics?
 A. 21 B. 19 C. 18 D. 23 E. 42



Exercise 20

Date:



A. Example:

$$3 \Psi 2 = 5$$

$$6 \Psi 4 = 20$$

1. $5 \Psi 3 = \square$ A. 0 B. 16 C. 24 D. 15 E. 2

2. $10 \Psi 7 = \square$ A. 17 B. 3 C. 51 D. 27 E. 15

3. $15 \Psi \square = 161$ A. 10 B. 8 C. 12 D. 3 E. 6

4. $3 \Psi 1 = \square$ A. 8 B. 2 C. 4 D. 5 E. 7

5. $9 \Psi 6 = \square$ A. 40 B. 35 C. 15 D. 45 E. 18



B. Example:

7

40

8

5

15

46

6

2

3

16

4

1

6.**8.**

5

5

?

A. 13

B. 10

C. 8

- D. 26
E. 28

19

3

52

- A. 26
B. 4
C. 55
D. 30
E. 22

7.**9.**

?

?

44

8

5

100

- A. 22
B. 10
C. 5
D. 17
E. 20

- A. 21
B. 20
C. 25
D. 35
E. 23

10.

2

5

?

16

- A. 23
B. 44
C. 21
D. 46
E. 7



C. Example:

$$7 \text{ } N \text{ } 4 = 48 \quad 6 \text{ } N \text{ } 3 = 33$$

11. $10 \text{ } N \text{ } 3 = \boxed{}$ A. 45 B. 48 C. 55 D. 30 E. 50
12. $12 \text{ } N \text{ } 10 = \boxed{}$ A. 360 B. 120 C. 170 D. 2 E. 180
13. $5 \text{ } N \text{ } 2 = \boxed{}$ A. 40 B. 3 C. 10 D. 7 E. 20
14. $16 \text{ } N \text{ } 8 = \boxed{}$ A. 24 B. 168 C. 128 D. 88 E. 100
15. $3 \text{ } N \text{ } 1 = \boxed{}$ A. 2 B. 4 C. 10 D. 8 E. 12

D. Complete the following numbers:

16. 102, 303, 504, 705, _____
A. 905 B. 806 C. 706 D. 707 E. 906
17. $\frac{4}{9}, \frac{6}{7}, \frac{8}{5}, \underline{\hspace{2cm}}$
A. $\frac{10}{5}$ B. $\frac{10}{3}$ C. $\frac{10}{1}$ D. $\frac{9}{3}$ E. $\frac{9}{7}$
18. 7, 5, 7, 10, 8, 10, 13, 11, _____
19. 3, 4, 12; 5, 6, 18; 7, 8, 24; _____
20. 1112, 2223, 3334, _____.



Exercise 21

Date:



A. Example:



$$\begin{array}{ccc} 5 & & = 15 \\ \nearrow & \searrow & \\ 8 & & \end{array}$$

$$\begin{array}{ccc} 5 & & = 10 \\ \nearrow & \searrow & \\ 7 & & \end{array}$$

$$\begin{array}{ccc} 7 & & = 63 \\ \nearrow & \searrow & \\ 16 & & \end{array}$$

1. $\begin{array}{ccc} 3 & & = ? \\ \nearrow & \searrow & \\ & 5 & \end{array}$

- A. 2
- B. 6
- C. 3
- D. 4
- E. 5

2. $\begin{array}{ccc} ? & & = 5 \\ \nearrow & \searrow & \\ & 6 & \end{array}$

- A. 2
- B. 0
- C. 5
- D. 1
- E. 4

3. $\begin{array}{ccc} 5 & & = 25 \\ \nearrow & \searrow & \\ & ? & \end{array}$

- A. 10
- B. 8
- C. 2
- D. 5
- E. 6

4. $\begin{array}{ccc} 2 & & = ? \\ \nearrow & \searrow & \\ & 9 & \end{array}$

- A. 7
- B. 18
- C. 16
- D. 14
- E. 15

5. $\begin{array}{ccc} ? & & = 0 \\ \nearrow & \searrow & \\ & 5 & \end{array}$

- A. 0
- B. 1
- C. 7
- D. 5
- E. 6

B. Example:



Complete the following number series:

- 6. 96, 69, 48, 72, 27, ____ A. 6 B. 12 C. 60 D. 56 E. 84
- 7. 16, 24, 36, 54, ____ A. 78 B. 87 C. 90 D. 60 E. 81
- 8. 81, 27, 9, ____ A. 6 B. 1 C. 3 D. 0 E. 18
- 9. ____, 36, 47, 58, 69 A. 25 B. 20 C. 26 D. 23 E. 28
- 10. 2223, 334, 4445, ____ A. 778 B. 556 C. 744 D. 844 E. 644



C. Example:

$14 \text{ } \div \text{ } 2 = 10$

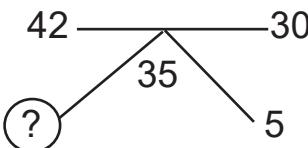
$16 \text{ } \div \text{ } 4 = 7$

$15 \text{ } \div \text{ } 5 = 3$

11. $? \div 4 = 8$ A. 24 B. 16 C. 12 D. 20 E. 32
12. $2 \div ? = 1$ A. 3 B. 2 C. 1 D. 4 E. 5
13. $44 \div ? = 14$ A. 10 B. 8 C. 7 D. 4 E. 12
14. $? \div 64 = 5$ A. 64 B. 1 C. 0 D. 128 E. 32
15. $36 \div 9 = ?$ A. 9 B. 7 C. 8 D. 5 E. 6

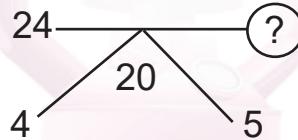
D. Example:

16.



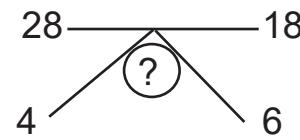
- A. 6 B. 5 C. 3
D. 7 E. 4

17.

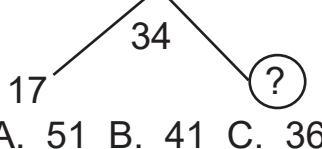


- A. 18 B. 25 C. 29
D. 15 E. 9

18.



- A. 10 B. 24 C. 32
D. 34 E. 20

19. $51 \text{ --- } 32$ 

- A. 51 B. 41 C. 36
D. 2 E. 30

20. $? \text{ --- } 24$ 

- A. 30 B. 35 C. 32
D. 33 E. 36



Exercise 22

Study each example and answer the questions under each example:



Date:

A. Example:



$4 + 2 = 14$

$5 + 3 = 23$

$1 + 4 = 9$

1. $3 + 12 = ?$

- A. 41 B. 51 C. 61 D. 31 E. 15

2. $2 + 5 = ?$

- A. 11 B. 9 C. 17 D. 15 E. 18

3. $? + 4 = 34$

- A. 4 B. 6 C. 10 D. 38 E. 30

4. $1 + 0 = ?$

- A. 1 B. 0 C. 2 D. 4 E. $1\frac{1}{2}$

5. $3 + 5 = ?$

- A. 32 B. 30 C. 16 D. 23 E. 11



B. Example:

6. A. 18 B. 9 C. 81 D. 3 E. 2
8. A. 42 B. 24 C. 17 D. 52 E. 25
10. A. 8 B. 3 C. 63 D. 81 E. 12
7. A. 18 B. 81 C. 1 D. 0 E. 9
9. A. 69 B. 5 C. 3 D. 6 E. 9

C. Example:

$$\begin{array}{rcl} L & \times & N = 15 \\ M & \times & N = 30 \end{array}$$

$$\begin{array}{rcl} K & \times & M = 24 \\ M & = & 6 \end{array}$$

11. $\frac{K - L}{2} = (?)$ A. $\frac{1}{2}$ B. $1\frac{1}{2}$ C. 3 D. $2\frac{1}{2}$ E. $3\frac{1}{2}$
12. $M \times 2 = (?)$ A. 4 B. 12 C. 8 D. 10 E. 6
13. $\frac{K^2 - M}{K + M} = (?)$ A. 2 B. 5 C. 1 D. 0 E. 6
14. $K + (?) = 12$ A. 4 B. 12 C. 8 D. 10 E. 6
15. $L + M + K + N = (?)$ A. 10 B. 16 C. 17 D. 18 E. 20



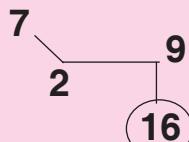
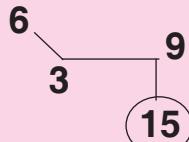
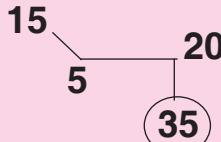
Exercise 23

Study each example and fill the missing spaces
in the questions under each example.



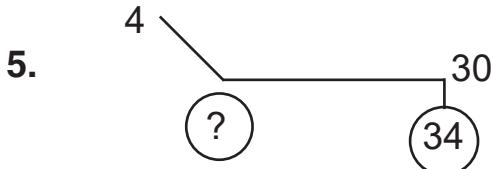
Date:

A. Example:



1. A. 35 B. 25 C. 12
D. 1 E. 49
2. A. 0 B. 2 C. 6
D. 1 E. 3
3. A. 1 B. 24 C. 30
D. 32 E. 40
4. A. 15 B. 5 C. 10
D. 25 E. 30





- A. 64 B. 34 C. 36 D. 26 E. 16

B. Example:



$5 + 2 \longrightarrow 1$

$8 + 6 \longrightarrow 2$

$6 + 4 \longrightarrow 1.3$

6. $4 + 4 \longrightarrow \boxed{}$

- A. 8 B. 1.1 C. 2.1 D. 1.5 E. 1

7. $1.2 + 5 \longrightarrow \boxed{}$

- A. 2 B. 6.2 C. 6.5 D. 3.8 E. 3

8. $6 + 3 \longrightarrow \boxed{}$

- A. 9 B. 3 C. 4 D. 2.2 E. 1.2

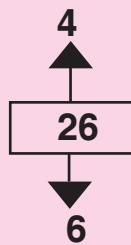
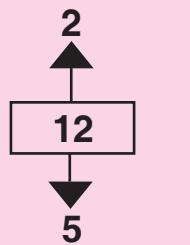
9. $5 + 6 \longrightarrow \boxed{}$

- A. 1.4 B. 11 C. 1 D. 2 E. 3.5

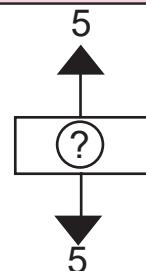
10. $3 + 2 \longrightarrow \boxed{}$

- A. 5 B. 1 C. 1.5 D. 0.5 E. 1.2



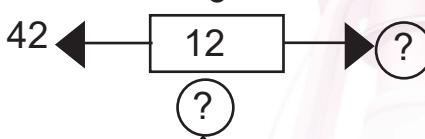
C. Example:

11.



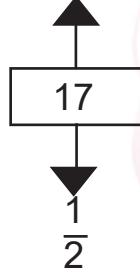
- A. 26 B. 27 C. 0
D. 8 E. 10

12.



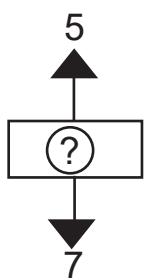
- A. 30 B. 28 C. 52
D. 32 E. 54

13.



- A. 15 B. 30 C. 60
D. 40 E. $17\frac{1}{2}$

14.



- A. 35 B. 36 C. 28
D. 37 E. 30

15.



- A. 42 B. 48 C. 13
D. 46 E. 44



@	2	3	4	5	6		7
2	4	6	1	3	5		0
3	6	2	P	1	4		0
4	1	5	1	6	3		0
5	3	1	6	T	W		0
6	R	4	3	2	1		0
7	0	0	Y	0	0		0

16. What is the value of P?
 A. 4 B. 5 C. 3 D. 2 E. 1
17. What is the value of T?
 A. 1 B. 2 C. 3 D. 5 E. 4
18. What is the value of R?
 A. 0 B. 6 C. 5 D. 3 E. 1
19. What is the value of W?
 A. 2 B. 3 C. 4 D. 5 E. 6
20. What is the value of Y?
 A. 0 B. 1 C. 3 D. 2 E. 4



Exercise 24

Study the examples carefully and answer the questions under each example.



Date:

A. Example:



$$3 \text{ W } 9 = 1$$

$$16 \text{ W } 8 = 2$$

$$14 \text{ W } 6 = 1R8$$

1. $5 \text{ W } 10 = \boxed{}$

- A. 1 B. 1R3 C. IR5 D. 2 E. IR2

2. $9 \text{ W } 8 = \boxed{}$

- A. 1R2 B. 2R1 C. 1R4 D. 1R5 E. 1R6

3. $10 \text{ W } 10 = \boxed{}$

- A. 1R9 B. 1R7 C. 1R8 D. 1R6 E. 2R5

4. $11 \text{ W } 2 = \boxed{}$

- A. 1R1 B. 1 C. 1R2 D. 2R1 E. 2

5. $5 \text{ W } 7 = \boxed{}$

- A. 1R2 B. 2 C. 1R1 D. 1R3 E. 1



**B. Example:**

	A	B	C	D
E	4	3	8	2
F	1	9	7	0
G	0	4	0	7
H	9	6	5	2

$$\begin{aligned} EA + FB + EB \\ = 4 + 9 + 3 = 16 \end{aligned}$$

$$\begin{aligned} GA \times FC \times ED \\ = 0 \times 7 \times 2 = 0 \end{aligned}$$

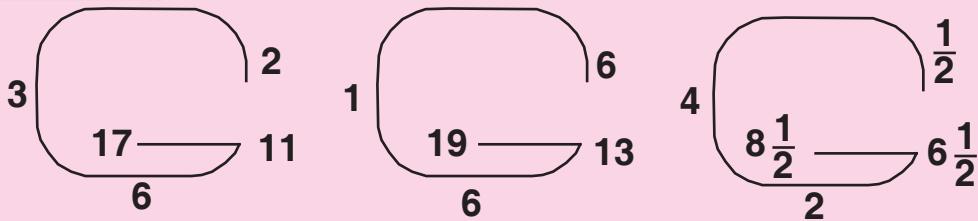
6. Which of the following is equal to 6?
A. FB B. FC C. HB D. HA E. GD
7. If FC is multiplied by GD, what will be the product?
A. 49 B. 28 C. 63 D. 45 E. 56
8. EA + GC + X = 13, which of the following is X?
A. EB B. HC C. FB D. ED E. GA
9. Find the sum of GD, FA and HC
A. 13 B. 14 C. 10 D. 12 E. 8
10. FB - HC = ?
A. HA B. FB C. GC D. EA E. HC

C. Example:

$$\begin{array}{rrrrrr} 5 & 0 & x & 1 & 4 & = & 21 \\ 6 & 1 & x & 0 & 5 & = & 29 \\ 3 & 0 & x & 1 & 3 & = & 10 \end{array}$$



11. $(?) \times 1 = 37$ A. 3 B. 4 C. 8 D. 5 E. 6
12. $7 \times 0 = (?)$ A. 29 B. 28 C. 27 D. 0 E. 33
13. $10 \times 1 (?) = 51$ A. 4 B. 5 C. 50 D. 11 E. 6
14. $9 \times 1 (?) = 45$ A. 45 B. 46 C. 44 D. 47 E. 43
15. $(?) \times 1 = 16 = 9$ A. 2 B. 3 C. 4 D. $\frac{1}{2}$ E. $\frac{1}{4}$

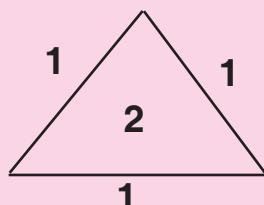
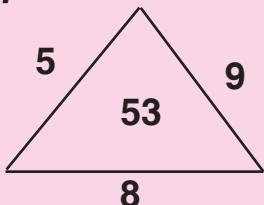
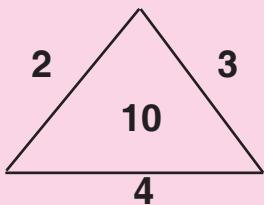
D. Example:

- 16.
- A. 12 B. 35 C. 40 D. 45 E. 54
- 17.
- A. $10\frac{1}{3}$ B. $16\frac{1}{3}$ C. $8\frac{1}{3}$ D. 10 E. $14\frac{1}{3}$
- 18.
- A. 1 B. 0 C. 2 D. 5 E. 6



**A. Example:**

Study the examples and answer the questions that follow:



- 1.
-
- A. 32 B. 36
C. 30 D. 42
E. 18

- 6.
-
- A. 48 B. 36
C. 30 D. 6
E. 0

- 2.
-
- A. 5 B. 9
C. 7 D. 10
E. 11

- 7.
-
- A. 10 B. 12
C. 6 D. 4
E. 3

- 3.
-
- A. 80 B. 40
C. 68 D. 2
E. 5

- 8.
-
- A. $\frac{1}{2}$ B. 0
C. 5 D. 4
E. 10

- 4.
-
- A. 3 B. 6
C. 8 D. 12
E. 25

- 9.
-
- A. $\frac{1}{3}$ B. $\frac{1}{5}$
C. $\frac{5}{6}$ D. $\frac{3}{4}$
E. $\frac{1}{2}$

- 5.
-
- A. 30 B. 40
C. 15 D. 10
E. 20

- 10.
-
- A. 8 B. 4
C. 7 D. 5
E. 6

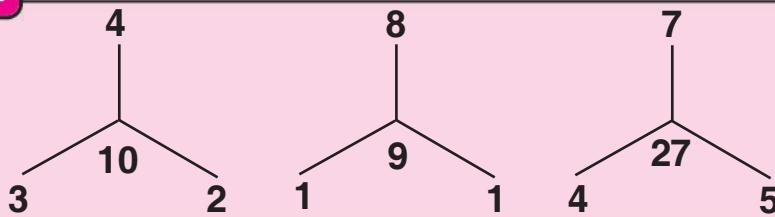


If MICROSOFT is represented by 675324281

B. Then answer the following:

11. What does '83241' represent?
A. MICRO B. FROST C. FRIST D. CROST E. FCOST
12. How will 'ROOMS' be written in code?
A. 52148 B. 34816 C. 32264 D. 32268 E. 32267
13. Write FIST in code
A. 8741 B. 8742 C. 8745 D. 8762 E. 8714
14. What does '524624' represent?
A. COSTOM B. COSOMS C. COSMOS
D. COSMIS E. COMSOM
15. Write MIST In code
A. 6521 B. 6751 C. 6741 D. 6714 E. 6745

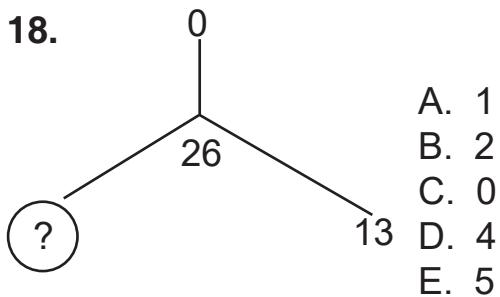
C. Example:



16.
A. 23
B. 24
C. 27
D. 28
E. 25
17.
A. 1
B. 2
C. 4
D. 5
E. 3

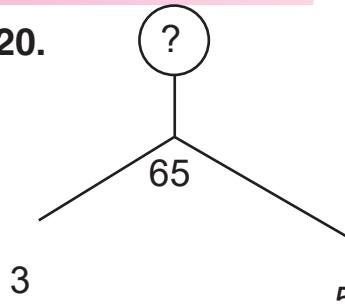


18.



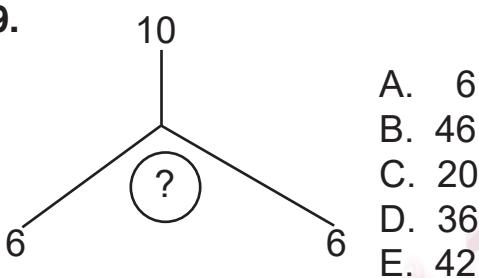
- A. 1
B. 2
C. 0
D. 4
E. 5

20.



- A. 40
B. 50
C. 73
D. 80
E. 60

19.



- A. 6
B. 46
C. 20
D. 36
E. 42

D. Example:

$$3 \div 3 = 2$$

$$6 \div 2 = 4$$

$$4 \div 1 = 5$$

21. $(?) \div 3 = 3$ A. 9 B. 6 C. 5 D. 12 E. 18

22. $24 \div 12 = (?)$ A. 2 B. 1 C. 3 D. 4 E. 5

23. $8 \div (?) = 5$ A. 4 B. 2 C. 8 D. 1 E. 6

24. $(?) \div 2 = 3$ A. 6 B. 4 C. 8 D. 10 E. 12

25. $4 \div 4 = (?)$ A. 1 B. 2 C. 3 D. 4 E. 5



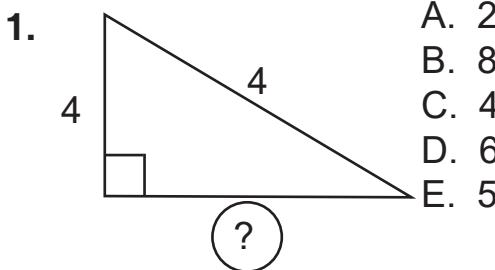
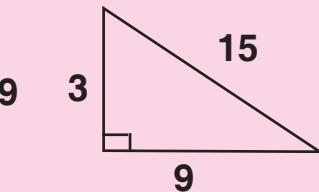
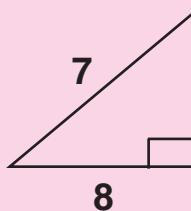
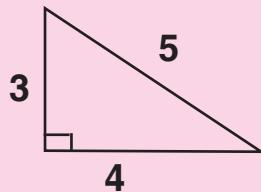
Exercise 26

Study each example and use the idea to answer the questions that follow:

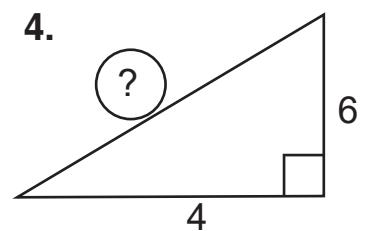


Date:

A. Example:

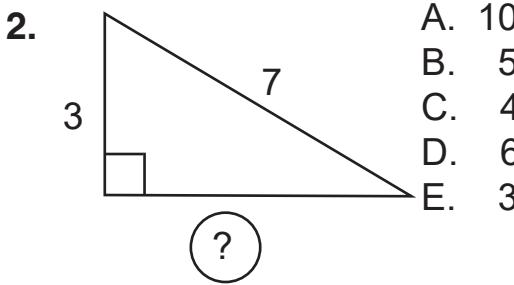


- A. 2
- B. 8
- C. 4
- D. 6
- E. 5

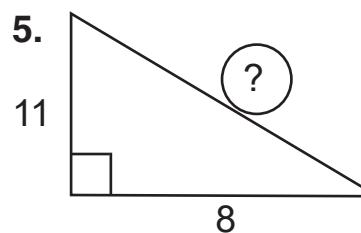


?

- A. 3
- B. 2
- C. 1
- D. 4
- E. 5

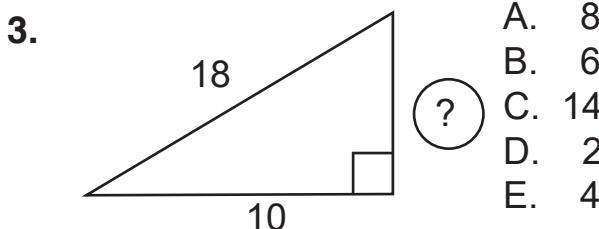


- A. 10
- B. 5
- C. 4
- D. 6
- E. 3



?

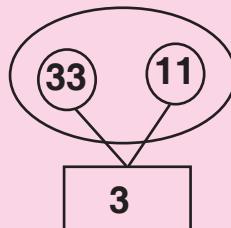
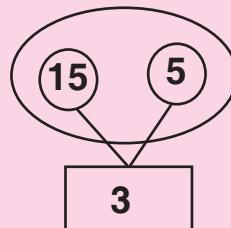
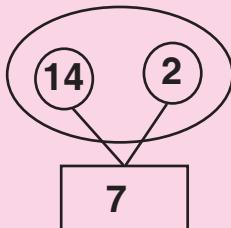
- A. 5
- B. 6
- C. 7
- D. 4
- E. 3



- A. 8
- B. 6
- C. 14
- D. 2
- E. 4

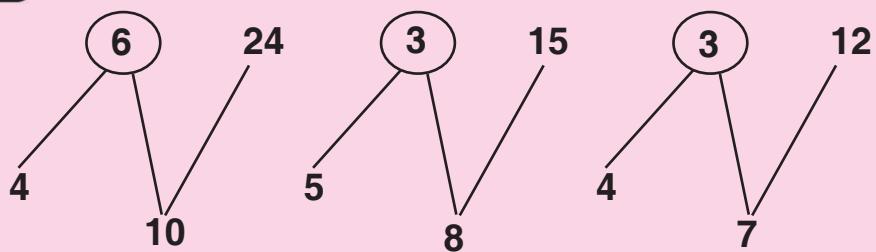
Score: _____



B. Example:

- 6.** A. 5
B. 13
C. 4
D. 6
E. 21
- 7.** A. 15
B. 7
C. 6
D. 13
E. 42
- 8.** A. 7
B. 8
C. 3
D. 6
E. 9
- 9.** A. 99
B. 20
C. 2
D. 54
E. 76
- 10.** A. 4
B. 2
C. 5
D. 3
E. 6
- 11.** A. 9
B. 18
C. 12
D. 4
E. 6



C. Example:

- 12.
-
- ```

graph TD
 10((10)) -- 10 --> 0(())
 10 -- ? --> ?

```
- A. 1      B. 20      C. 100  
D. 0      E. 10

- 13.
- 
- ```

graph TD
    7((7)) -- 12 --> 84((84))
    7 -- ? --> ?
  
```
- A. 84 B. 19 C. 5
D. 7 E. 12

- 14.
-
- ```

graph TD
 7((7)) -- 4 --> ?
 7 -- 11 --> 21((21))

```
- A. 11      B. 3      C. 18  
D. 21      E. 28

- 15.
- 
- ```

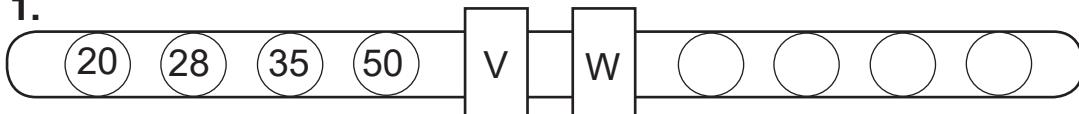
graph TD
    ?((?)) -- 16 --> 16((16))
    ? -- "16 1/2" --> 16_1_2["16 1/2"]
    ? -- 8 --> 8((8))
  
```
- A. 2 B. $\frac{1}{2}$ C. 4
D. 32 E. 24



A. Example:



1.



2.



3.



4.



5.



B. Example:

$$4 \text{ } \bigodot \text{ } 2 = \frac{6}{2} = 3 \quad 7 \text{ } \bigodot \text{ } 3 = \frac{10}{4} = 2\frac{1}{2}$$

$$9 \text{ } \bigodot \text{ } 6 = \frac{15}{3} = 5$$

6. $5 \text{ } \bigodot \text{ } 3 = \frac{8}{\square}$ A. 6 B. 6 C. 4
D. 3 E. 2

7. $6 \text{ } \bigodot \text{ } 2 = \frac{\square}{4}$ A. 8 B. 6 C. 4
D. 2 E. 5

8. $4 \text{ } \bigodot \text{ } 1 = \frac{\square}{3}$ A. 8 B. 6 C. 4
D. 2 E. 5

9. $10 \text{ } \bigodot \text{ } 5 = \frac{\square}{5}$ A. 15 B. 3 C. 2
D. 1 E. 0

10. $\square \bigodot 3 = \frac{18}{12}$ A. 15 B. 2 C. 30
D. 21 E. 16

11. $10 \text{ } \bigodot \text{ } \square = \frac{16}{4}$ A. 2 B. 4 C. 6
D. 12 E. 20

12. $3\frac{1}{2} \bigodot \square = \frac{6}{1}$ A. $\frac{1}{2}$ B. $1\frac{1}{2}$ C. $2\frac{1}{2}$
D. $3\frac{1}{2}$ E. $4\frac{1}{2}$

13. $11 \text{ } \bigodot \text{ } 3 = \frac{14}{\square}$ A. 2 B. 7 C. 8
D. 17 E. 28

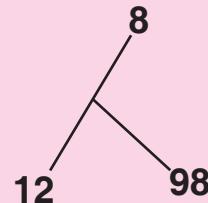
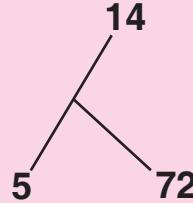
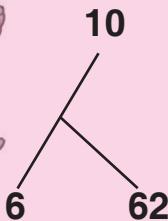


- C. In this diagram if you add down each column or across each row, the sum is 50.

12	18	X
22	K	2
Y	6	28

14. What is the value of "K"?
 A. 26 B. 24 C. 20 D. 22 E. 22
15. What is the value of "Y"?
 A. 16 B. 12 C. 8 D. 14 E. 20
16. What is the value of "X"?
 A. 40 B. 20 C. 60 D. 28 E. 24
17. What is the sum of "K", "Y" and "X"?
 A. 42 B. 22 C. 62 D. 50 E. 26
18. What is the sum of the figures in the middle column and the middle row?
 A. 90 B. 100 C. 60 D. 48 E. 80

D. Example:



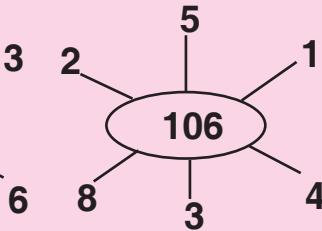
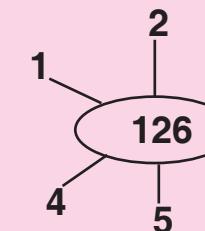
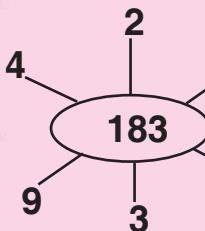
19. A. 12
 B. 3
 C. 8
 D. 6
 E. 13
20. A. 225
 B. 217
 C. 252
 D. 227
 E. 272





Date:

A. Example:



- 1.
-
- A. 350
B. 250
C. 180
D. 280
E. 210
- 2.
-
- A. 98
B. 96
C. 88
D. 69
E. 196
- 3.
-
- A. 288
B. 240
C. 350
D. 280
E. 246
- 4.
-
- A. 276
B. 286
C. 266
D. 186
E. 365
- 5.
-
- A. 159
B. 318
C. 195
D. 218
E. 116



B. What are the next two numbers?

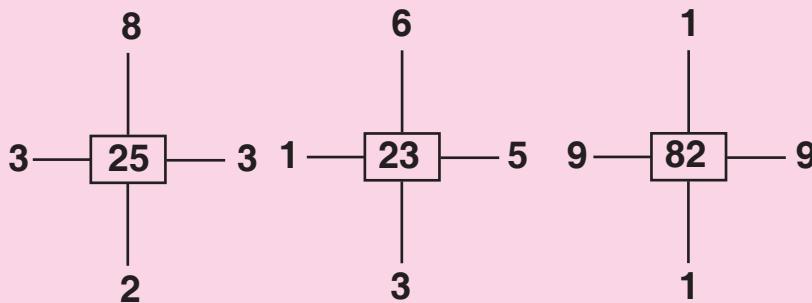
6. 1, 12, 23, 34, ____, ____
 A. 44, 54 B. 40, 45 C. 54, 34
 D. 45, 56 E. 64, 74
7. 81, 54, 36, ____, ____
 A. 24 B. 12, 6 C. 18, 12 D. 12, 9 E. 36, 12
8. 32, 16, 8, 4, 2, ____, ____
 A. $1\frac{1}{4}$ B. 2, 1 C. $1\frac{1}{2}$ D. $\frac{1}{2} \quad \frac{1}{4}$ E. $2\frac{1}{2}$
9. 1, 3, 5, 7, 9, ____, ____
 A. 10, 11 B. 14, 15 C. 17, 15
 D. 18, 15 E. 11, 13
10. 2, 3, 4, 6, 8, 12, 16, ____, ____
 A. 20, 24 B. 24, 32 C. 17, 20
 D. 21, 26 E. 20, 24

C. Example:

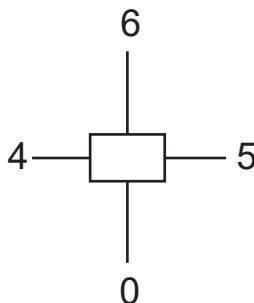
8 T 5 = 6, Since $8 - 5 = 3$ and $3 \times 2 = 6$

11. 13 T 8 = A. 42 B. 10 C. 5 D. 8 E. 6
12. 12 T = 6 A. 6 B. 2 C. 3 D. 9 E. 18
13. T 7 = 10 A. 3 B. 5 C. 12 D. 2 E. 17
14. 9 T = 9 A. 1 B. 18 C. 0 D. 3 E. $4\frac{1}{2}$
15. $14\frac{1}{2}$ T 4 = A. 20 B. $10\frac{1}{2}$ C. $6\frac{1}{2}$ D. 26 E. 21



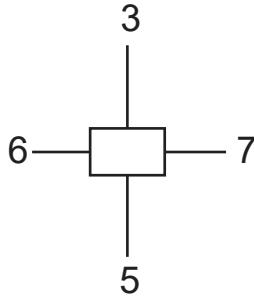
D. Example:

16.



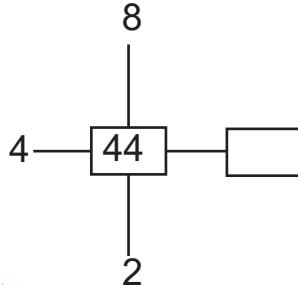
- A. 20
B. 60
C. 40
D. 80
E. 10

17.



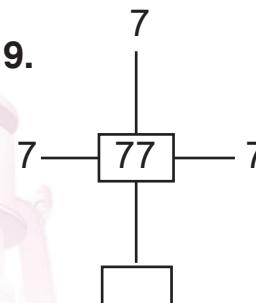
- A. 21
B. 57
C. 28
D. 50
E. 27

18.



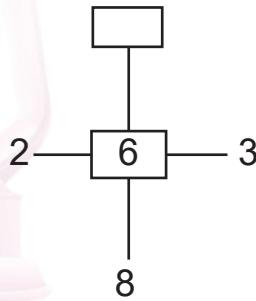
- A. $8\frac{1}{2}$
B. 11
C. 15
D. 7
E. 30

19.



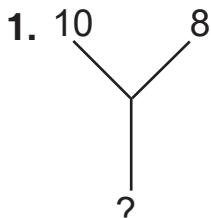
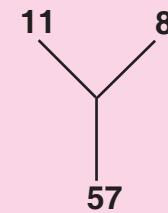
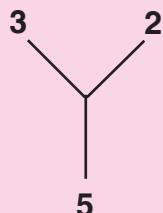
- A. 42
B. 4
C. 8
D. 77
E. 7

20.

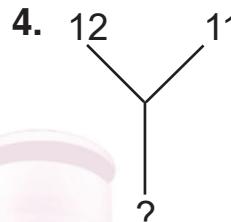


- A. 1
B. $\frac{1}{8}$
C. $\frac{1}{4}$
D. 2
E. 0

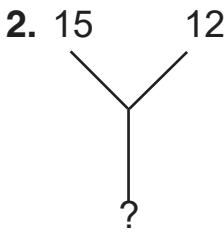


**A. Example:**

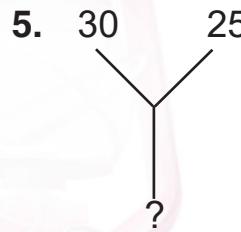
- A. 39 B. 60
C. 24 D. 16
E. 36



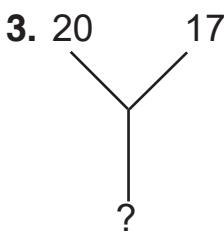
- A. 132 B. 23
C. 33 D. 156
E. 265



- A. 81 B. 27
C. 180 D. 225
E. 164



- A. 275 B. 55
C. 750 D. 550
E. 900



- A. 37 B. 340
C. 111 D. 154
E. 400

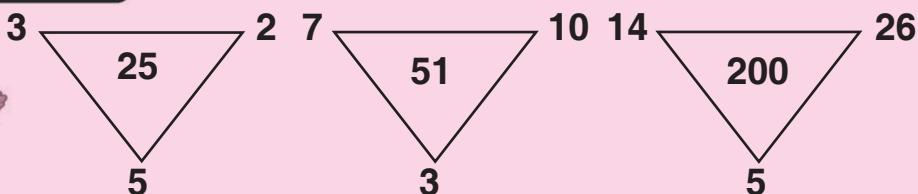


B. Example:

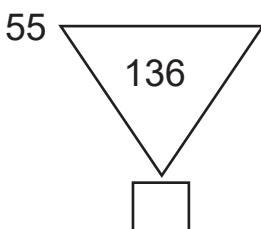
$$5 \blacksquare 3 = 15, \quad 3 \blacktriangle 4 = 7, \quad 5 \blacktriangledown 3 = 2$$

Use the above to answer question 5 - 8.

6. Find the value of $(6 \blacksquare 3) \blacktriangledown (5 \blacksquare 2)$
 A. 28 B. 18 C. 10 D. 8 E. 2
7. Evaluate $\left(\frac{8 \blacktriangle 24}{15 \blacktriangledown 11} \right) \blacksquare 9 = ?$
 A. 72 B. 63 C. 54 D. 36 E. 24
8. What is the value of $(3 \blacksquare 5) \blacktriangle (9 \blacktriangledown 8) =$
 A. 20 B. 16 C. 15 D. 14 E. 2
9. $(4 \blacktriangle 3)^2 - (2 \blacksquare 5)^2$
 A. 4900 B. 51 C. 81 D. 100 E. 149

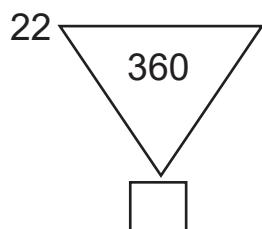
C. Example:

10.



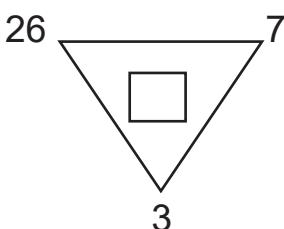
- A. 5
B. 2
C. 22
D. 52
E. 146

13.



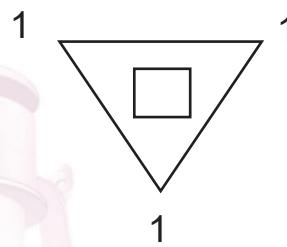
- A. 8
B. 60
C. 300
D. 10
E. 6

11.



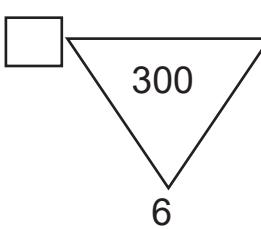
- A. 99
B. 33
C. 66
D. 36
E. 52

14.



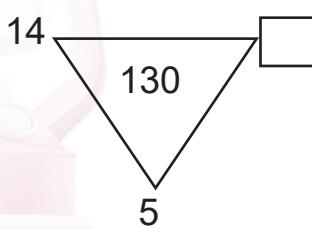
- A. 1
B. $\frac{1}{2}$
C. 2
D. 4
E. 0

12.



- A. 50
B. 240
C. 8
D. 2
E. 56

15.

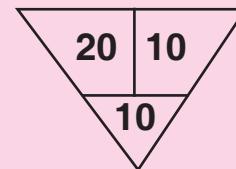
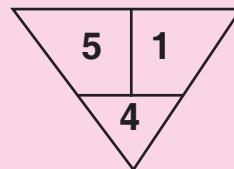
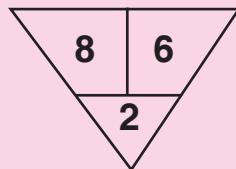


- A. 10
B. 14
C. 16
D. 18
E. 12

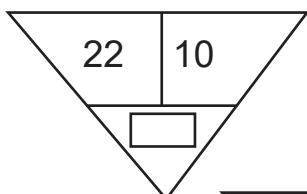


**Complete these:**

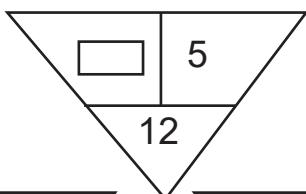
1. (4, 8): (9, 13) : (16, 20): (25,H) What does H stand for? _____
2. (6, 12): (13, 19): (18, 24): (21, Y) What does Y stand for? _____
3. (5, 7): (8, R): (13, 15): (20, 22) What does R stand for? _____
4. (4, P): (10, 20): (16, 26): (22, 32) What does P stand for? _____
5. (12, 15): (19, M): (21, 24): (25, 28) What does M stand for? _____
6. (1, 2, 3, 4, 5, 6, 7, 8, 9). Find all the odd numbers in the number pattern. Multiply each by 5. Add up all your answers. _____
7. Add all the even numbers from 10 to 20. Divide your answer by 2 _____
8. Add all odd numbers from 1 to 5, multiply by 2. _____
9. 105, 107, _____, 111, 113.
10. Add the first 5 odd numbers and the first 5 even numbers together _____

B. Example:

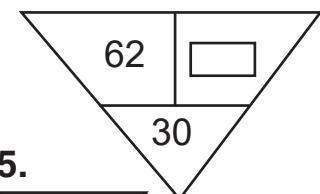
11.



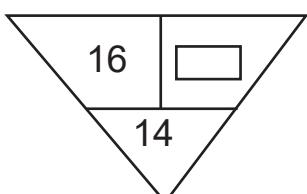
12.



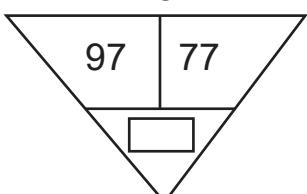
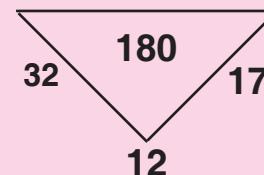
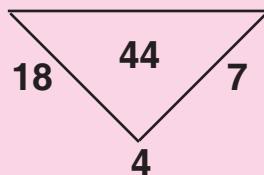
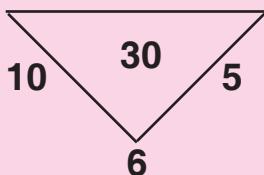
13.



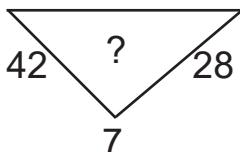
14.



15.

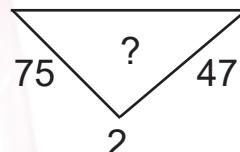
**C. Example:**

16.



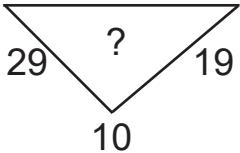
- A. 86
- B. 77
- C. 21
- D. 98
- E. 28

19.



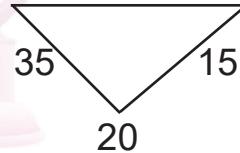
- A. 28
- B. 124
- C. 76
- D. 56
- E. 68

17.



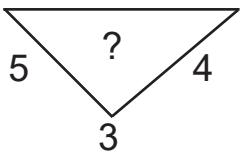
- A. 200
- B. 48
- C. 190
- D. 58
- E. 100

20.



- A. 70
- B. 400
- C. 20
- D. 40
- E. 50

18.



- A. 3
- B. 4
- C. 5
- D. 7
- E. 12



A. Example:

$$8/6 = 2$$

$$5//4 = 9$$

$$7//2/3 = 6$$

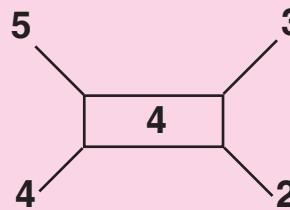
1. $15/5//2 = \boxed{}$
2. $65/20/10 = \boxed{}$
3. $88// \boxed{} = 120$
4. $43/13// \boxed{} = 36$
5. $65/ \boxed{} // 30 = 80$

B. Example:

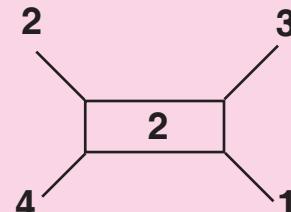
If EDUCATION is represented by 726519834

6. Find the word which is represented by 519 _____
7. ACTION is represented by what numbers _____
8. Express 65 in letters _____
9. Use letters to show $78 \div 2$
10. The word NINE is represented by what numbers? _____
11. 32, 32, 34, 34, 36, _____
12. 37, 31, 25, _____
13. 2, 5, 9, 14, _____
14. 52, 42, 32, _____
15. $\frac{1}{2}, \frac{3}{4}, 1, \underline{\hspace{2cm}}, 1\frac{1}{2}$
16. 83, 73, 64, 56, _____

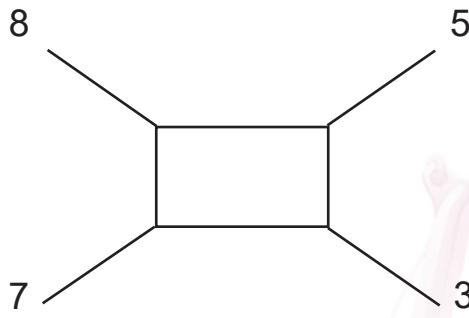


C. Example:

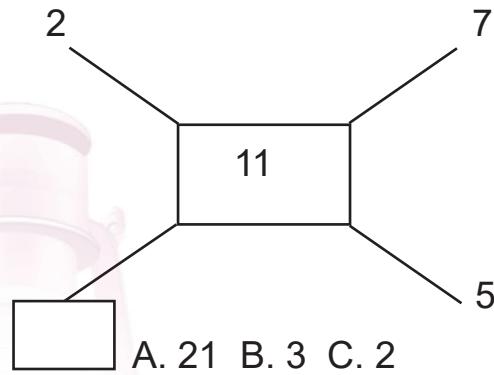
17



19



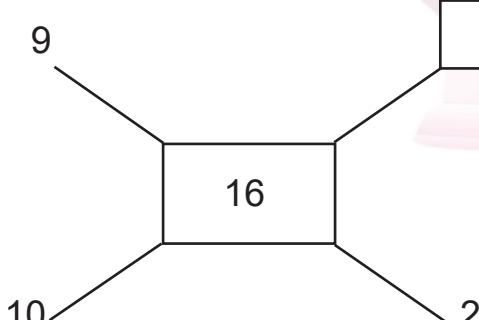
- A. 12 B. 7 C. 3
D. 9 E. 2



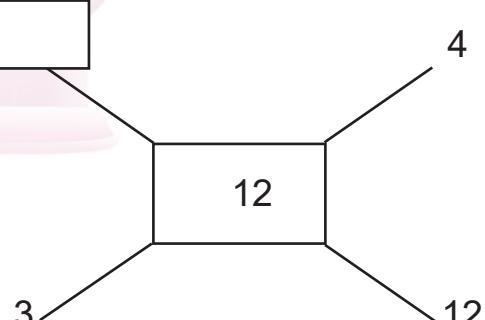
- A. 21 B. 3 C. 2
D. 16 E. 19

18

20



- A. 4 B. 5 C. 1
D. 3 E. 2



- A. 25 B. 10 C. 14
D. 4 E. 18





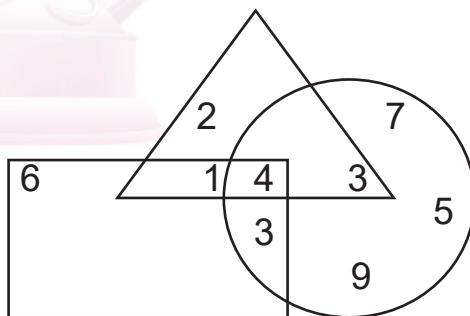
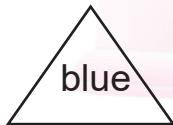
A. Example:

A	B	C	D	E	F	G	H	I	J	K	L
1	2	3	4	5	6	7	8	9	10	11	12

Use the above diagram to solve questions 1 - 5:

1. $C + A \times F =$
2. $L \div B =$
3. $2 \times 4 \times 5 \div 6 =$
4. Write LEG in numbers _____
5. $\frac{ADG}{G} \times E =$ Write in numbers _____
6. Find the sum of 4, 8, 12, 16, and 20 _____
7. Subtract 525 from 861 _____
8. Divide 96 by 3 _____
9. Write sixty thousand, two hundred and three in figures.

The three shapes represent colours liked by different numbers of children:



Use the above diagram to answer questions 10 - 15:

10. What number represents the children who like the three colours? _____
11. What number(s) represent those who like only white? _____
12. What number(s) represent those who like only red? _____
13. What number(s) represent those who like only blue? _____
14. Add up the number(s) of those who like all the colours.
Multiply your answer by 5 _____
15. Find the difference between those who like only red and those who like only white _____

B. Example:



18	2
4	4

25	5
4	5

14	5
3	3

16.

29	11
<input type="text"/>	2

19.

<input type="text"/>	5
2	8

17.

<input type="text"/>	4
4	4

20.

<input type="text"/>	37
4	15

18.

38	<input type="text"/>
6	6



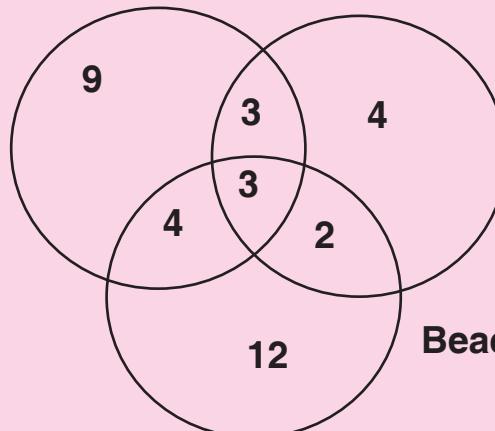
**A. Example:**

Some pupils were asked whether their favourite holiday destination were beaches, games reserves or warm springs. Their answers are shown in this venn diagram.

**Games
Reserves**

**Warm
Springs**

Beaches



1. How many did not like beaches? _____
2. How many did not like games reserves? _____
3. How many pupils were asked? _____
4. How many pupils liked both warm springs and beaches?

5. How many pupils did not like either warm springs or games reserves? _____
6. 64, 16, 4, 1, _____
7. 4, 9, 14, _____, 24
8. _____, 11, 18, 25, 32
9. _____, 20, 15, 10
10. 75, 74, 72, 71, _____, _____



B. Example:

$$4//8 = 32, \quad 12/3 = 4, \quad 18/3//5 = 30$$

11. $2//4//3 = ?$ A. 8 B. 12 C. 24 D. 8 E. 6
 12. $18/3//? = 12$ A. 4 B. 2 C. 4 D. 6 E. 9
 13. $?//6 = 42$ A. 8 B. 6 C. 9 D. 36 E. 7
 14. $24/?/3 = 4$ A. 2 B. 4 C. 8 D. 20 E. 12
 15. $4//3/3 = ?$ A. 1 B. 4 C. 2 D. 24 E. 36
 16. $48/3/? = 2$ A. 2 B. 4 C. 8 D. 6 E. 24

C. Example:

49	_____	7
36	_____	6
25	_____	5

1	_____	1
4	_____	2
9	_____	3

17.

?	_____	8
16	_____	4
100	_____	10

19.

144	_____	?
25	_____	5
4	_____	2

18.

36	_____	6
1	_____	1
81	_____	?

20.

9	_____	3
121	_____	?
49	_____	7





A. Example:



	45
18	5

	54
12	9

	36
6	12

1.

	?
22	11

- A. 242 B. 121
C. 100 D. 33
E. 11

5.

	400
40	?

- A. 10 B. 160
C. 440 D. 100
E. 20

2.

	80
16	?

- A. 96 B. 64
C. 128 D. 10
E. 20

3.

	91
?	13

- A. 14 B. 35
C. 94 D. 78
E. 7

4.

	?
24	15

- A. 90 B. 180
C. 48 D. 39
E. 300



B. Example:

$$P(2) = 3$$

$$P(3) = 5$$

$$P(10) = 19$$

6. $P(40) = \boxed{\quad}$

9. $P(5) = \boxed{\quad}$

7. $P(\boxed{\quad}) = 17$

10. $P(\boxed{\quad}) = 23$

8. $P(50) = \boxed{\quad}$

11. What is the value of $2\frac{1}{2} + 6\frac{1}{2} + 10?$ _____

12. 2, 4, 16, _____

13. Which of the following is the smallest fraction?

$$\frac{1}{8}, \frac{7}{12}, \frac{1}{4}, \frac{5}{12}, \frac{1}{2}$$

14. What is the total number of letters in this question? _____

15. $250 + 250 + 250 + 250 + 250 = 1,250$. If you prefer to multiply, what number must you multiply by? _____.

16. How many seconds are there in 24 hours? _____

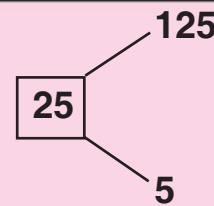
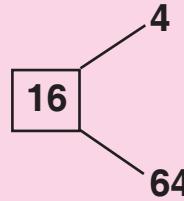
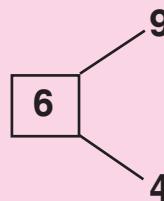
17. Add the first 5 odd numbers, and multiply your answer by 100. _____.

18. 6, 13, 8, 12, 10, 19, 36. How many even numbers are in this series? _____.

19. My mother was born in 1909. How old was she in 1975?

20. 64, 6, 10, 22, 8. Add the first two numbers and the last two numbers. Divide your answer by the middle number.



A. Example:

1.
 A. 112
 B. 9
 C. 4
 D. 99
 E. 36

4.
 A. 2
 B. 4
 C. 6
 D. 16
 E. 18

2.
 A. 16
 B. 12
 C. 32
 D. 64
 E. 128

5.
 A. 400
 B. 20
 C. 40
 D. 41
 E. 9

3.
 A. 225
 B. 450
 C. 25
 D. 34
 E. 15



B. Example:

$$\begin{array}{r} 3 & P & 4 & = & 9 \\ 4 & P & 6 & = & 12 \\ 8 & P & 3 & = & 13 \end{array}$$

6. $(?)P\ 7 = 15$ A. 4 B. 5 C. 4 D. 6 E. 3
 7. $9\ P\ 9 = (?)$ A. 81 B. 18 C. 21 D. 23 E. 20
 8. $0\ P\ 1 = (?)$ A. 1 B. 2 C. 3 D. 5 E. 6
 9. $(?)\ P\ 15 = 28$ A. 12 B. 10 C. 11 D. 13 E. 15
 10. $9\ P\ (?) = 14$ A. 2 B. 4 C. 1 D. 0 E. 3

C. Example:

25	2	50	6
5	3	10	4
65		260	

11.

40	3
8	5

 A. 60 B. 5 C. 170 D. 48 E. 200
 12.

33	7
	4

 A. 11 B. 22 C. 3 D. 45 E. 28
 13.

120	
20	11

 A. 18 B. 450 C. 6 D. 31 E. 9
 14.

45	3
15	

 A. 10 B. 12 C. 60 D. 40 E. 18
 15.

81	5
9	4

 A. 90 B. 360 C. 14 D. 85 E. 369



D. Example:

$$4 \quad b \quad 4 = 5$$

$$9 \quad b \quad 3 = 12$$

$$30 \quad b \quad 15 = 32$$

16. What is $8 \text{ b } 4$?

- A. 6 B. 4 C. 2 D. 10 E. 12

17. Find the value of $2 \text{ b } 2$.

- A. 3 B. 1 C. 4 D. 6 E. 0

18. If $x \text{ b } 3 = 16$, What number does x represent?

- A. 15 B. 12 C. 9 D. 6 E. 18

19. Evaluate $18 \text{ b } 2$.

- A. 20 B. 27 C. 9 D. 16 E. 19

20. If $6 \text{ b } y = 9$, what is y ?

- A. 2 B. 3 C. 4 D. 6 E. 1

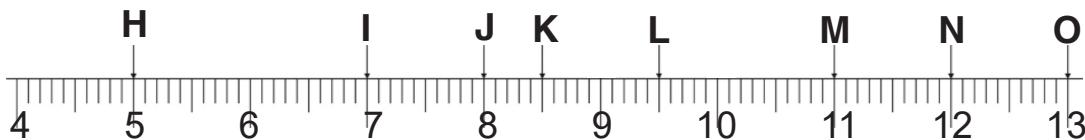




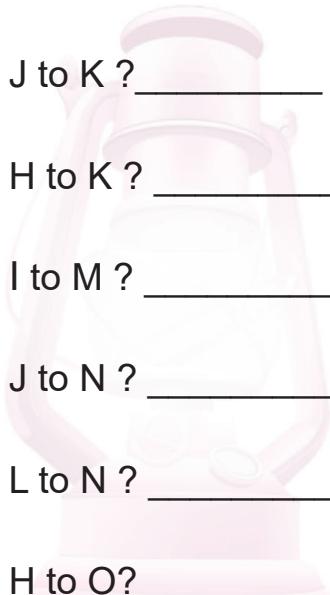
A. Example:



Below is a portion of a centimetre ruler.
Use this to answer questions 1 - 8



1. How far is it from H to I ? _____
2. How far is it from J to K ? _____
3. How far is it from H to K ? _____
4. How far is it from I to M ? _____
5. How far is it from J to N ? _____
6. How far is it from L to N ? _____
7. How far is it from H to O? _____
8. Which distance is longer? From H to J or from I to L?



B. Example:

$$1 \text{ } \bigcirc \text{ } 3 = 12$$

$$2 \text{ } \bigcirc \text{ } 2 = 8$$

$$6 \text{ } \bigcirc \text{ } 1 = 7$$

9. $3 \text{ } \bigcirc \text{ } ? = 4$ A. 2 B. 1 C. 3 D. 4 E. 0

10. $? \text{ } \bigcirc \text{ } 3 = 27$ A. 2 B. 4 C. 3 D. 6 E. 5

11. $7 \text{ } \bigcirc \text{ } 2 = ?$ A. 18 B. 16 C. 12 D. 9 E. 5

12. $6 \text{ } \bigcirc \text{ } ? = 40$ A. 40 B. 10 C. 8 D. 5 E. 4

13. $? \text{ } \bigcirc \text{ } 8 = 88$ A. 11 B. 7 C. 4 D. 3 E. 5

C. Example:

$$5 \boxed{7} = 3 \quad 3 \boxed{8} = 4 \quad 2 \boxed{4} = 2$$

14. $11 \boxed{20} = \boxed{}$

15. $3 \boxed{9} = \boxed{}$

- A. 9 B. 12 C. 10
D. 31 E. 21

- A. 12 B. 6 C. 3
D. 18 E. 0



16. 5 $\boxed{\quad}$ = 3

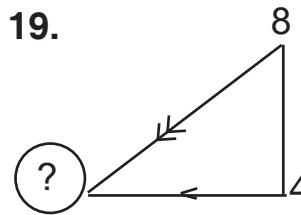
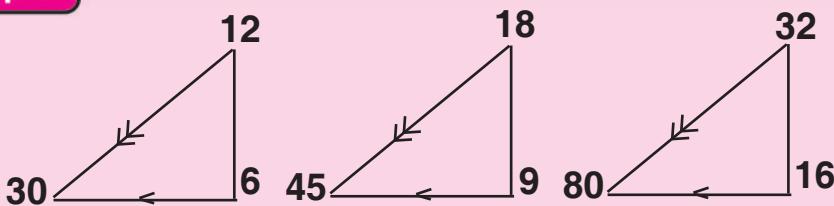
- A. 18 B. 8 C. 20
D. 15 E. 30

18. 4 $\boxed{51}$ = $\boxed{\quad}$

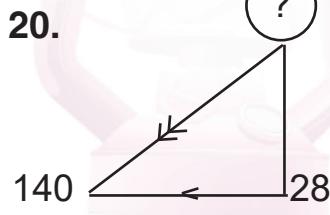
- A. 8 B. 12 C. 18
D. 15 E. 21

17. 7 $\boxed{25}$ = $\boxed{\quad}$

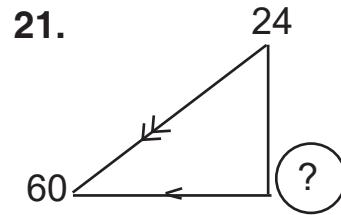
- A. 7 B. 14 C. 35
D. 32 E. 18

D. Example:

- A. 12
B. 24
C. 20
D. 18
E. 10



- A. 28
B. 38
C. 48
D. 56
E. 112

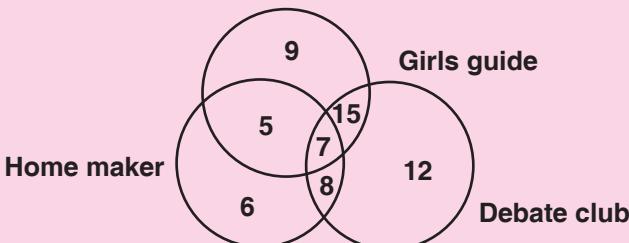


- A. 12
B. 24
C. 25
D. 30
E. 20



**A. Example:**

The three circles show the girls in their different clubs:



1. How many girls are only in Debate club?
A. 7 B. 15 C. 27 D. 20 E. 12
2. How many girls belong to Girls guide?
A. 35 B. 45 C. 55 D. 36 E. 15
3. How many girls belong to Debate club?
A. 8 B. 7 C. 15 D. 20 E. 42
4. How many girls belong to both Girls guide and Debate club?
A. 12 B. 8 C. 15 D. 32 E. 42
5. How many girls belong to only one club?
A. 6 B. 27 C. 28 D. 8 E. 7
6. How many girls belong to Home maker?
A. 15 B. 20 C. 25 D. 26 E. 24
7. How many girls are in both Home maker and Debate club?
A. 6 B. 7 C. 8 D. 10 E. 9
8. How many girls are in Girls guide, Debate club and Home maker?
A. 7 B. 6 C. 8 D. 9 E. 15



9. How many belong to two clubs only?
 A. 28 B. 20 C. 13 D. 15
 E. 8
10. How many girls belong to both Home maker and Girls guide?
 A. 15 B. 5 C. 8 D. 6 E. 12

Study the table below to find the value of each letter:

B. Example:



3	•	37	=	111
3	•	74	=	222
3	•	111	=	333
3	•	V	=	444
3	•	W	=	X
3	•	222	=	666
3	•	Y	=	Z

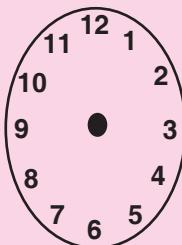
11. What does “Z” stand for?
 A. 333 B. 666 C. 444 D. 777 E. 555
12. What is “V”?
 A. 248 B. 48 C. 348 D. 448 E. 148
13. What does “Y” stand for?
 A. 519 B. 395 C. 259 D. 159 E. 359
14. What is the value of “W”?
 A. 185 B. 195 C. 215 D. 175 E. 225
15. What does “X” stand for?
 A. 333 B. 395 C. 259 D. 159 E. 555





Date:

A. Example:



$9 + 6 = 3$

$2 + 7 = 9$

$4 - 5 = 11$

$6 + 7 = 1$

Use the diagram of the clock face to work out numbers 1-10.

1. $8 + 5 =$
2. $10 + 6 =$
3. $3 - 4 =$
4. $5 - 8 =$
5. $7 + 4 =$
6. $8 - 3 =$
7. $9 + 4 =$
8. $6 - 6 =$
9. $12 + 4 =$
10. $1 - 1 =$



B. Example:

2	4	6
4	16	20
6	36	42

11.

a	25	30
3	b	12
7	49	c

a =
b =
c =

14.

11	a	132
5	25	b
10	100	c

a =
b =
c =

12.

8	64	a
9	b	90
c	36	42

a =
b =
c =

15.

2	4	6
12	a	b
3	9	c

a =
b =
c =

13.

10	a	110
1	1	b
4	c	20

a =
b =
c =

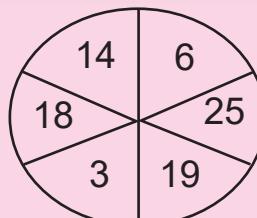
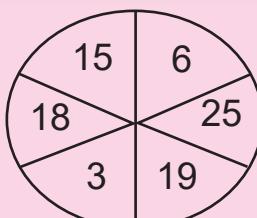
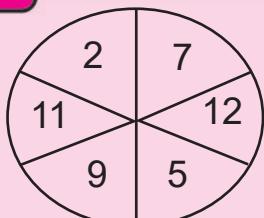


Test 13



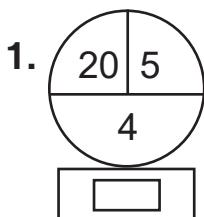
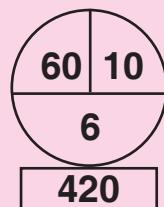
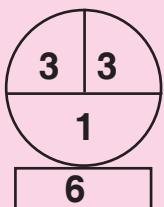
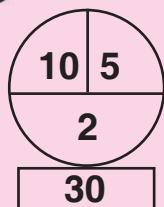
Date:

Example:

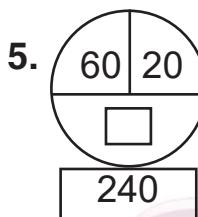


- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

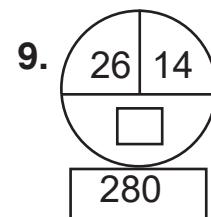


A.Example:

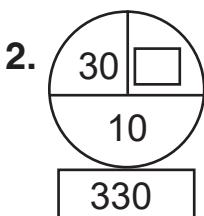
- A. 112
B. 100
C. 105
D. 80
E. 30



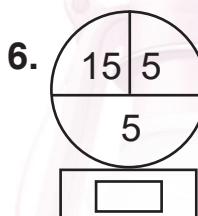
- A. 3
B. 9
C. 12
D. 16
E. 8



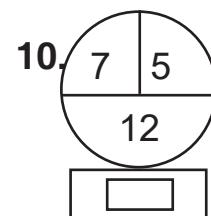
- A. 2
B. 9
C. 3
D. 7
E. 6



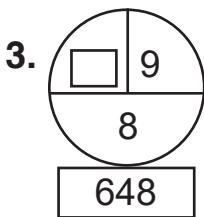
- A. 3
B. 7
C. 6
D. 5
E. 3



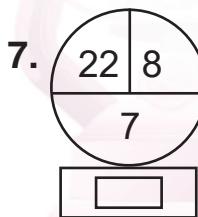
- A. 100
B. 60
C. 50
D. 20
E. 10



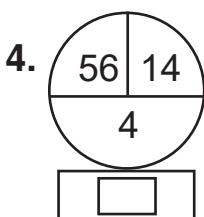
- A. 123
B. 115
C. 144
D. 66
E. 72



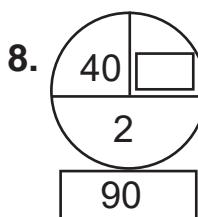
- A. 8
B. 7
C. 9
D. 12
E. 14



- A. 55
B. 210
C. 70
D. 90
E. 53

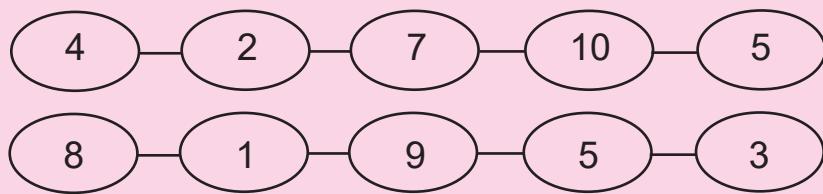


- A. 250
B. 165
C. 272
D. 170
E. 90



- A. 15
B. 10
C. 25
D. 5
E. 18



B. Example:

1.

A. 1 B. 2 C. 6 D. 5 E. 4

2.

A. 10 B. 4 C. 7 D. 5 E. 6

3.

A. 6 B. 1 C. 5 D. 7 E. 8

4.

A. 1 B. 2 C. $\frac{1}{2}$ D. 4 E. 3

5.

A. 2 B. 5 C. 4 D. 3 E. 6



Example:



		5	
3		6	8
	6		

	3		
9		3	1
	4		

1.

	7	
2		5
	4	

- A. 20 B. 8 C. 11
D. 18 E. 15

2.

	8	
3	5	9

- A. 6 B. 4 C. 9
D. 5 E. 8

3.

	1	
9		0
	9	

- A. 9 B. 15 C. 12
D. 18 E. 10

4.

	4	
9	2	
	5	

- A. 4 B. 3 C. 2
D. 5 E. 1

5.

	1	
1		1
	1	

- A. $\frac{1}{2}$ B. 0 C. 3
D. 1 E. 2



Example:

$\frac{1}{2}$

$\frac{1}{3}$

$\frac{3}{4}$

$\frac{1}{6}$

$\frac{2}{5}$

$\frac{1}{4}$

$\frac{5}{6}$

$\frac{22}{24}$

$\frac{13}{20}$

1

$\frac{1}{3}$

$\frac{3}{5}$

- A. $\frac{4}{8}$ B. $\frac{4}{15}$ C. $\frac{11}{13}$
 D. $\frac{14}{15}$ E. $\frac{8}{10}$

2

$\frac{1}{2}$

$\frac{1}{2}$

- A. $\frac{9}{12}$ B. $\frac{6}{8}$ C. $\frac{3}{4}$
 D. $\frac{7}{8}$ E. $\frac{12}{16}$

3

$\frac{1}{9}$

$\frac{1}{9}$

- A. $\frac{1}{3}$ B. $\frac{2}{9}$ C. $\frac{2}{3}$
 D. $\frac{1}{9}$ E. $\frac{3}{5}$

4

$\frac{2}{7}$

$\frac{1}{4}$

- A. $\frac{3}{28}$ B. $\frac{18}{28}$ C. $\frac{3}{11}$
 D. $\frac{3}{14}$ E. $\frac{15}{28}$

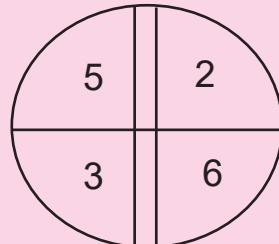
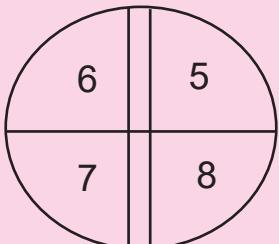
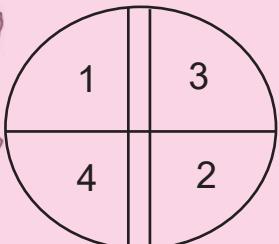
5

$\frac{9}{11}$

$\frac{1}{5}$

- A. $\frac{1}{11}$ B. $\frac{7}{5}$ C. $\frac{3}{55}$
 D. $\frac{45}{55}$ E. $\frac{1}{5}$



Example:

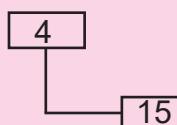
- 1.
- | | |
|---|---|
| 3 | 1 |
| 4 | 7 |
- A. 14 B. 13 C. 11 D. 12 E. 15
- 2.
- | | |
|---|---|
| 6 | 3 |
| 4 | 2 |
- A. 8 B. 7 C. 9 D. 10 E. 6
- 3.
- | | |
|---|---|
| 8 | 6 |
| 9 | 4 |
- A. 9 B. 0 C. 10 D. 11 E. 12
- 4.
- | | |
|---|---|
| 1 | 4 |
| 2 | 6 |
- A. 4 B. 6 C. 7 D. 5 E. 12
- 5.
- | | |
|---|---|
| 1 | 2 |
| 3 | 4 |
- A. 8 B. 18 C. 1 D. 0 E. 9





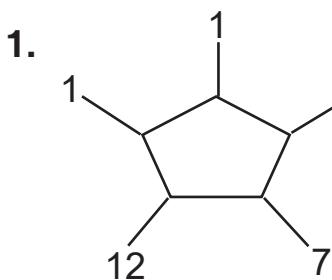
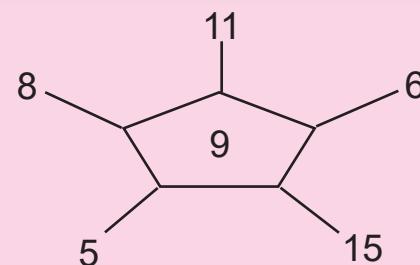
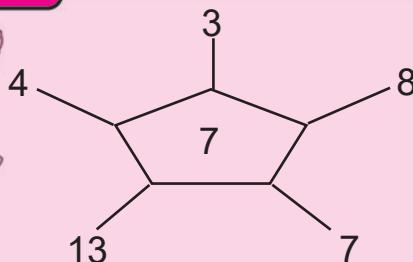
Date:

Example:

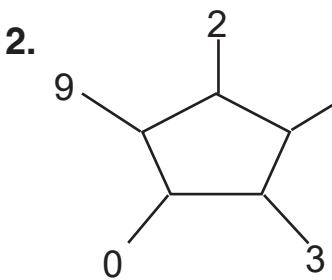


1. A. 3 B. 6 C. 12 D. 18 E. 24
2. A. 8 B. 48 C. 24 D. 16 E. 28
3. A. $\frac{1}{4}$ B. $1\frac{1}{2}$ C. $\frac{1}{3}$ D. $1\frac{1}{4}$ E. $\frac{1}{6}$
4. A. 2.5 B. 1.5 C. 1.0 D. 0.3 E. 3
5. A. 25 B. 8 C. 16 D. 45 E. 48

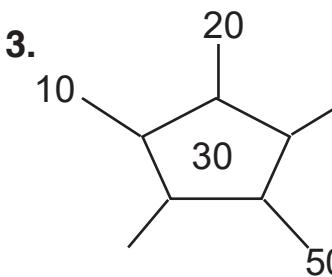


Example:

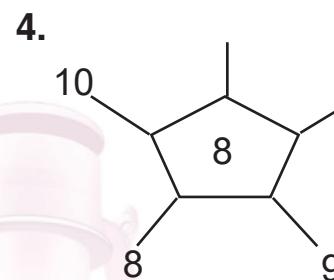
- A. 12
B. 10
C. 8
D. 5
E. 6



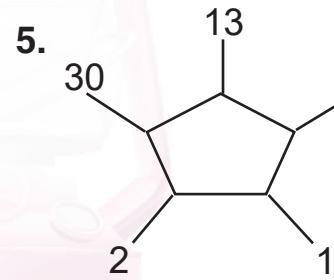
- A. 5
B. 3
C. 6
D. 2
E. 7



- A. 50
B. 100
C. 80
D. 60
E. 40

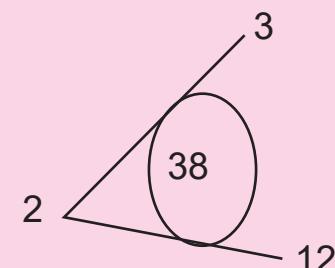
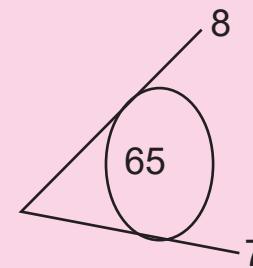
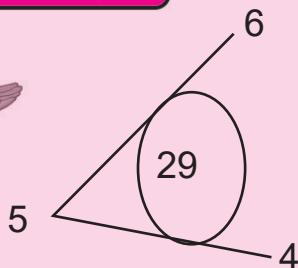


- A. 6
B. 18
C. 16
D. 8
E. 17

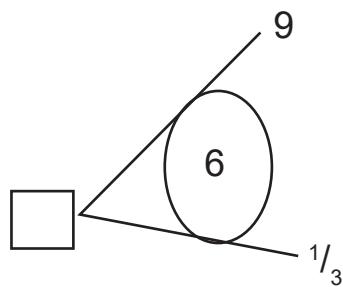


- A. 15
B. 12
C. 32
D. 16
E. 20



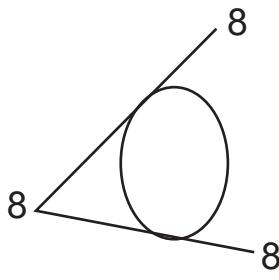
A. Example:

1.



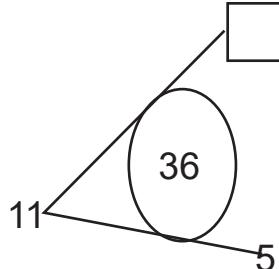
- A. 7
B. 11
C. 3
D. $\frac{1}{2}$
E. $\frac{3}{4}$

2.



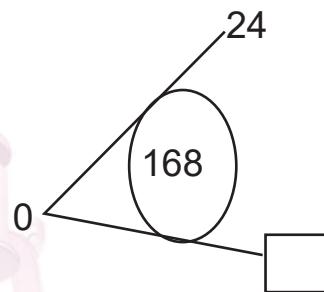
- A. 32
B. 64
C. 24
D. 8
E. 72

3.



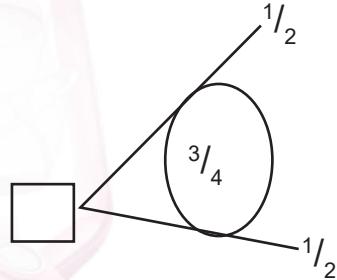
- A. 5
B. 6
C. 16
D. 20
E. 10

4.



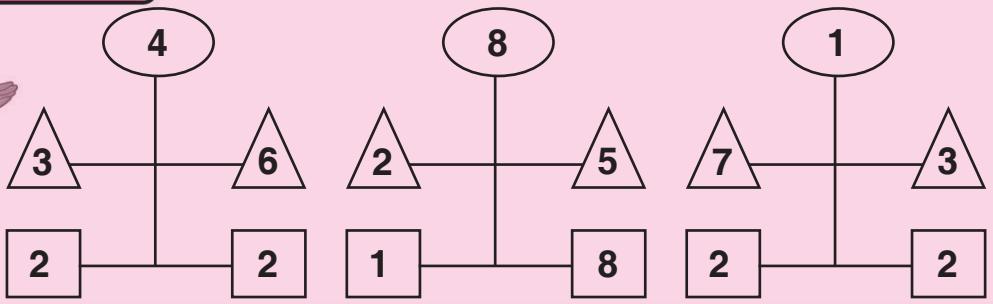
- A. 8
B. 9
C. 7
D. 12
E. 26

5.

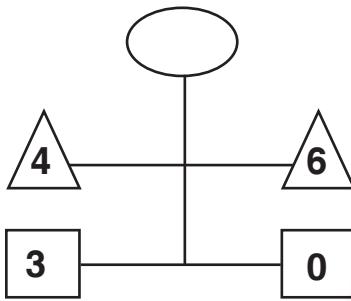


- A. $\frac{1}{4}$
B. $\frac{1}{2}$
C. $\frac{1}{5}$
D. $\frac{3}{10}$
E. 4



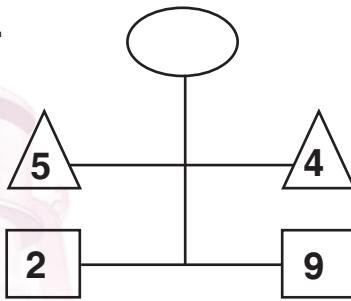
B. Example:

6.



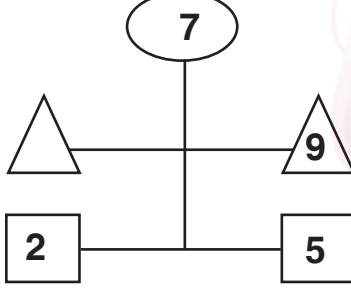
- A. 6
B. 10
C. 12
D. 1
E. 0

9.



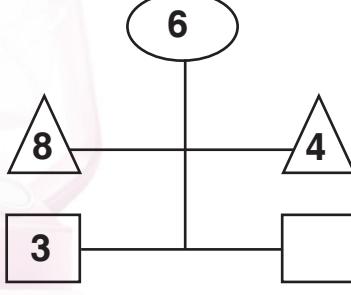
- A. 14
B. 11
C. 13
D. 10
E. 9

7.



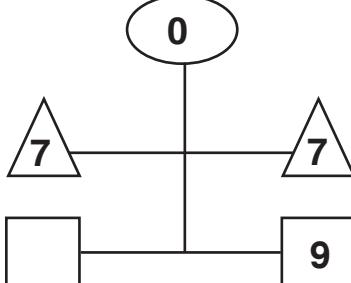
- A. 1
B. 2
C. 8
D. 7
E. 3

10.



- A. 11
B. 10
C. 8
D. 9
E. 12

8.



- A. 7
B. 10
C. 8
D. 4
E. 0



Example:

15	11	19
3		
12	8	16

8	5	28
2		
6	3	26

37	41	68
5		
32	36	63

1.

13	18	37
	7	
	11	30

 A. 6
B. 8
C. 9
D. 5
E. 2
4.

12	26	10
	10	
2	16	

 A. 6
B. 3
C. 2
D. 1
E. 0
2.

64	47	71
	7	
55	38	62

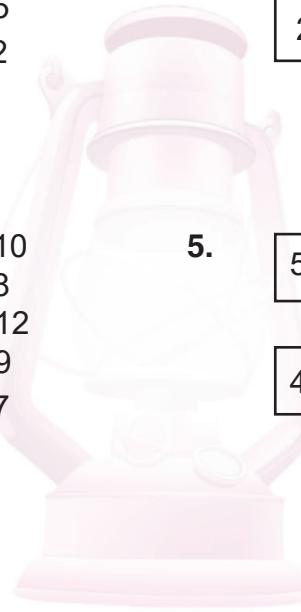
 A. 10
B. 8
C. 12
D. 9
E. 7
5.

55	93	39
	7	
43	81	27

 A. 16
B. 15
C. 12
D. 14
E. 13
3.

22		19
	8	
14	4	11

 A. 13
B. 12
C. 15
D. 17
E. 27





A. Example:



$10 \text{ W } 2 = 4$

$21 \text{ W } 7 = 49$

1. $30 \text{ W } 6 = \boxed{}$

4. $28 \text{ W } 4 = \boxed{}$

- A. 36
- B. 18
- C. 30
- D. 72
- E. 180

- A. 32
- B. 64
- C. 16
- D. 48
- E. 128

2. $15 \text{ W } 5 = \boxed{}$

5. $100 \text{ W } 5 = \boxed{}$

- A. 20
- B. 25
- C. 45
- D. 50
- E. 75

- A. 50
- B. 500
- C. 250
- D. 5
- E. 750

3. $40 \text{ W } 8 = \boxed{}$

- A. 48
- B. 200
- C. 320
- D. 64
- E. 128



6. $(2; 4), (8; 16), (6; 12)$ _____
 A. $(7; 21)$ B. $(3; 9)$ C. $(5; 10)$
 D. $(9; 12)$ E. $(13; 33)$
7. $(8: 32), (1:4), (5:20)$ _____
 A. $(6: 2)$ B. $(3:12)$ C. $(2:6)$
 D. $(14:28)$ E. $(20:40)$
8. $(20:60), (40:120), (15:45)$, _____
 A. $(60:120)$ B. $(13:39)$ C. $(45:60)$
 D. $(18:42)$ E. $(20:40)$
9. $(40: 80), (100:200), (33:66)$, _____
 A. $(121: 242)$ B. $(100:400)$ C. $(25:75)$
 D. $(1:6)$ E. $(55:135)$
10. $(3:15), (5:25), (7:35)$, _____
 A. $(8:60)$ B. $(7:28)$ C. $(12:60)$
 D. $(10:100)$ E. $(20:80)$

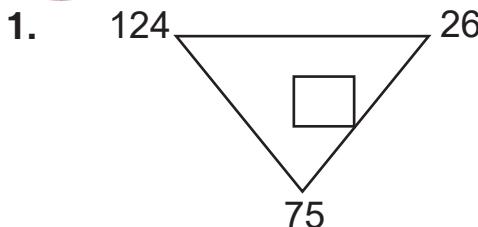
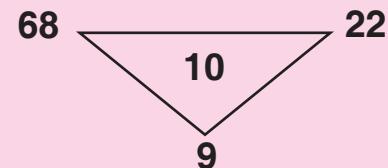
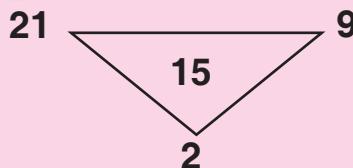
B. Example:

$$(1, 3) \text{ } \bigcirc \text{ } (2, 3) = (5, 18)$$

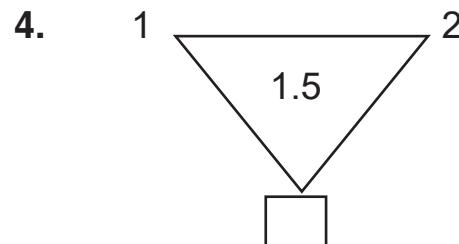
$$(2, 3) \text{ } \bigcirc \text{ } \left(\frac{1}{2}, 2\right) = (1, 6)$$

11. $(3, 4) \text{ } \bigcirc \text{ } (5, 2) = ?$
 A. $(7, 7)$ B. $(8, 8)$ C. $15, 8$
 D. $(20, 34)$ E. $(34, 20)$
12. $(?, 3) \text{ } \bigcirc \text{ } (6, 8) = (61, 73)$
 A. 3 B. 5 C. 6 D. 8 E. 61
13. $(7, 5) \text{ } \bigcirc \text{ } (?) \text{ } (6) = (74, 61)$
 A. 5 B. 6 C. 7 D. 61 E. 74

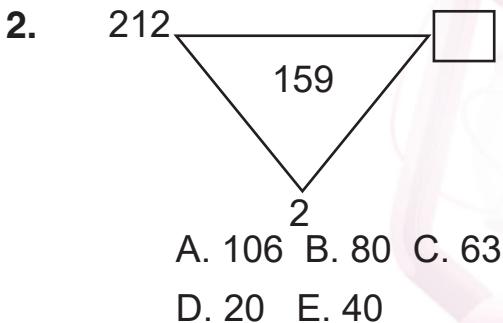


Example:

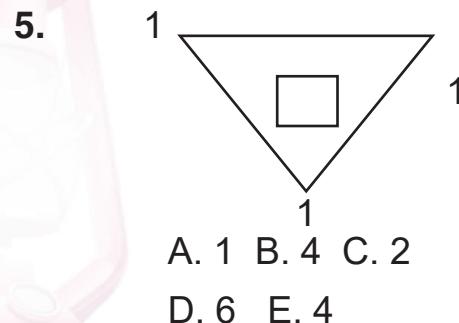
- A. 4 B. 5 C. 8
D. 2 E. 10



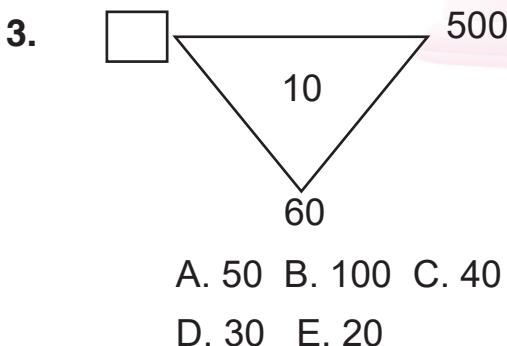
- A. 4 B. 2 C. 0.5
D. 5 E. 1



- A. 106 B. 80 C. 63
D. 20 E. 40



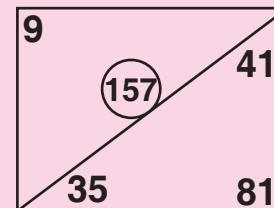
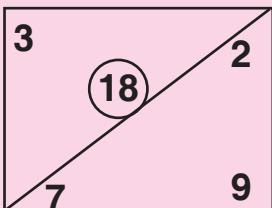
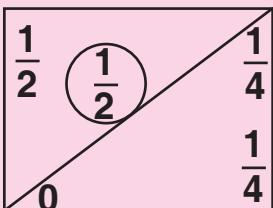
- A. 1 B. 4 C. 2
D. 6 E. 4



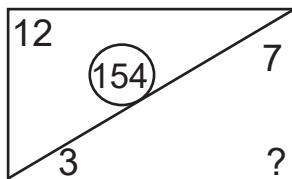
- A. 50 B. 100 C. 40
D. 30 E. 20



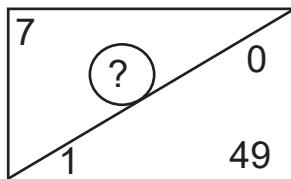
Example:



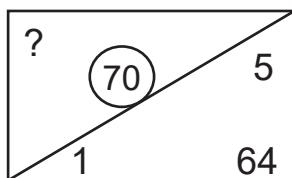
1.



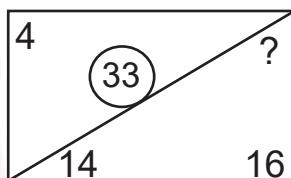
6.



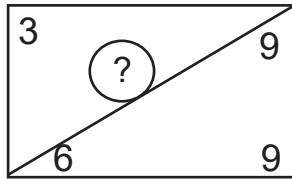
2.



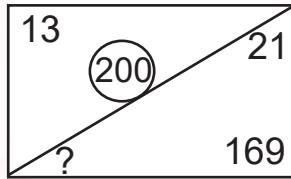
7.



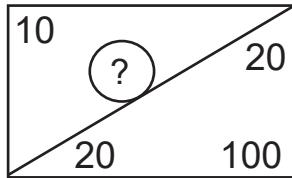
3.



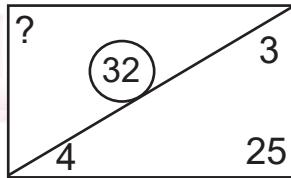
8.



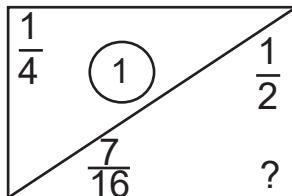
4.



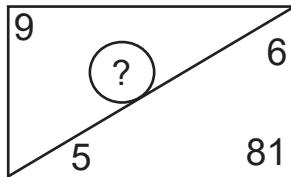
9.



5.



10.



Example:



25

16

49

9

64

36

9

40

28

1. $121 - \boxed{} - 100$

- A. 20 B. 21 C. 221
D. 42 E. 10

4.

$81 - \boxed{} - 17$

- A. 64 B. 98 C. 164
D. 42 E. 8

2. $225 - \boxed{} - 200$

- A. 5 B. 15 C. 25
D. 205 E. 245

5.

$169 - \boxed{} - 36$

- A. 18 B. 133 C. 13
D. 15 E. 25

3. $\boxed{} - 4 - 5$

- A. 6 B. 8 C. 10
D. 14 E. 9





STEPS TO QUANTITATIVE REASONING

For Primary Schools

5

Ore Olunloyo



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LITERAMED PUBLICATIONS (NIG) LTD

First Published, 1990

Revised 1999, 2002, 2005, 2008, 2009, 2011, 2014, 2016, 2018, 2022

Replanned 2006, 2014, 2025

Reprinted 2003, 2004, 2012, 2025

by

Lantern books



a division of

Literamed Publications Nigeria Limited

No 1, Plot 45, Morrison Crescent,

Alausa Bus-Stop Oregun Road

P. M. B. 21068,

Ikeja, Lagos,

Nigeria.

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Email: information@literamed.com

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Literamed Publications (Ghana) Limited

Plot 2, 7th Street, South Odorkor Esatake,

Sakaman (Opposite Enso Nyame Ye Spot)

P. O. Box DS 583,

Dansoman, Accra,

Ghana.

Tel: +233-244-779853

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ISBN 978-978-100-946-4

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Designed and Printed by

Literamed Publications Nigeria Limited

Printing Press Division,

Ikeja, Lagos.

Preface



Steps to Quantitative Reasoning is a collection of carefully graded books designed to put pupils through the skills needed for quantitative reasoning.

It is hoped that at the end of the series, the pupils who use it would have a basic understanding in tackling any past question papers on Quantitative Aptitude, and that it would guide the child step-by-step to a brilliant performance in the common entrance examination, Universal Basic Education examination and similar intelligence tests. Since solutions to problems in the books demand careful attention and reasoning, the series impact, gradually, these skills to children.

It is however very important for the teacher to structure the learning process even though the exercises are self-explanatory.

Remember, we learn by doing, but we learn best of all by doing correctly.

In each of the books, the exercises and tests become progressively difficult. The books can be used at home and in school. There is an answer book for the series.

In this revised edition, more exercises have been included to expand further the pupils' activities and to prepare them for Universal Basic Education examinations.

Steps to Quantitative Reasoning has a companion series called Steps to Verbal Reasoning.

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Subtraction

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