Factors, Multiples, Venn diagram and nth term

The factors of a number are those numbers that divide exactly into it, without leaving a remainder.

Example: the factors of 8 are: 1, 2, 4, and 8, because;

1 x 8 = 8 and 2 x 4 = 8

Find all the factors of these numbers:

1. 6 _____ 2. 12 _____

3. 8 _____ 4. 9 _____

5. 18 _____ 6. 15 _____

7. 24 _____ 8. 23 _____

A number which only has factors of 1 and itself is called a PRIME NUMBER.

For example the factors of 3 are 1 and 3. There is no other way of multiplying two whole numbers to make 3. 3 is a prime number.

9. **Write prime numbers between 10 and 40.**

You can tell a number is a multiple of **9** if its digits add up to a multiple of E.g. **15 822** is a multiple of **9** because its digits add up to **18**, which is a multiple of **9**.

- Put the following numbers into the correct place on Carroll diagramA:

1	2	6	9	25	36	49	54
63	69	81	91	144	101	108	135

	Carroll Diagram A	Multiples of 9	Not Multiples of 9
10.	Even Numbers		
11.	Odd Numbers		

➢ Put the following numbers into the correct place on Carroll diagramB:

1	2	4	10	18	25	35	36
50	66	81	99	100	111	121	144

	Carroll Diagram B	Square numbers	Not square number
12.	Even Numbers		
13.	Not Even Numbers		

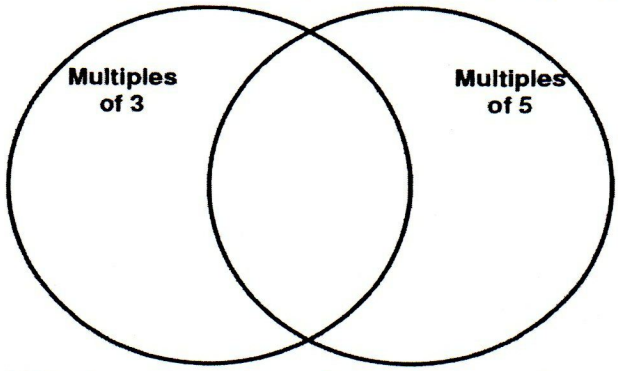
➢ Put the following numbers into the correct place on Carroll diagramC:

1	2	24	6	60	4	84	3

	Carroll Diagram C	Factors of 12	Multiples of 12
14.	Even Numbers		
15.	Odd Numbers		

16. Put these numbers in the correct places in the Venn Diagram:

9, 12, 15, 20, 25, 30, 36, 42, 45, 55

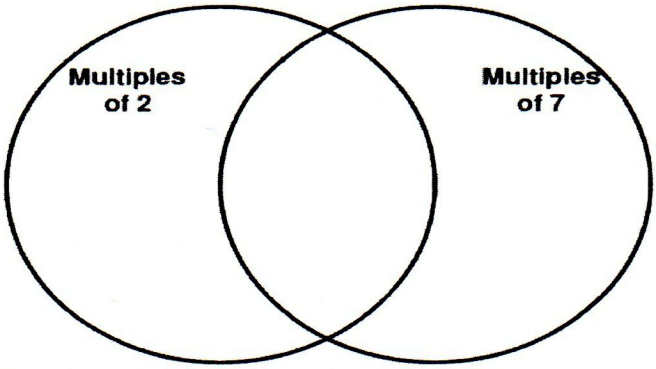


17. What can you say about the numbers in the middle section of the Venn Diagram?

_____

18. Complete this sentence: Numbers that are multiples of 3 and multiples of 5 are also multiples of _____.

19. Put these numbers in the correct places in the Venn Diagram:
4, 7, 14, 16, 28, 35, 42, 46, 56



20. What can you say about the numbers in the middle section of the Venn Diagram?

_____

21. Complete this sentence: Numbers that are multiples of **2** and multiples of **7** are also multiples of _____.

We can use the idea in question 21. in reverse:
If a number is a multiple of **14**, it is also a multiple of __2___ and __7__.
Now complete these sentences:

22. If a number is a multiple of **35**, it is also a multiple of _____ and _____.

23. If a number is a multiple of **22**, it is also a multipleof _____ and _____.

24. If a number is a multiple of **10**, it is also a multiple of _____ and _____.

25. If a number is a multiple of **21**, it is also a multiple of _____ and _____.

26. If a number is a multiple of **55**, it is also a multiple of _____ and _____.

27. If a number is a multiple of **26**, it is also a multiple of _____ and _____.

Write the next three terms in the sequence?

28. **3, 7, 15, 31, 63,** _____, _____, _____.

29. **5, 15, 45, 135,** _____, _____, _____.

30. **3, 5, 8, 12, 17,** _____, _____, _____.

31. **2, 4, 8, 14, 22,** _____, _____, _____.

32. **5, 10, 20, 35, _____, _____, _____.**

33. **1, 3, 6, 10, 15, _____, _____, _____.**

34. **3, 6, 12, 24, _____, _____, _____.**

35. **6, 7, 10, 15, 22, _____, _____, _____.**

36. **2, 4, 8, 16, 32, _____, _____.**

37. **3, 9, 27, 81, _____, _____, _____.**

38. **5, 10, 20, 40, _____, _____, _____.**

39. **9, 15, 22, 30, 39, _____, _____, _____.**

40. **10, 20, 40, 70, _____, _____, _____.**