1) Complete this table, showing square and cube numbers, with the correct values. The first one has been done for you.

2^2	2 × 2	4
	3 × 3	
3^3		
	6 × 6	
		125
		64
	4 × 4 × 4	
5^2		
		8

2) Use the <, > and = symbols to make these number statements correct.

a) 3^2 ___ 5 × 5 ___ 2^3

b) 4^3 ___ 6^2 ___ 4 × 4

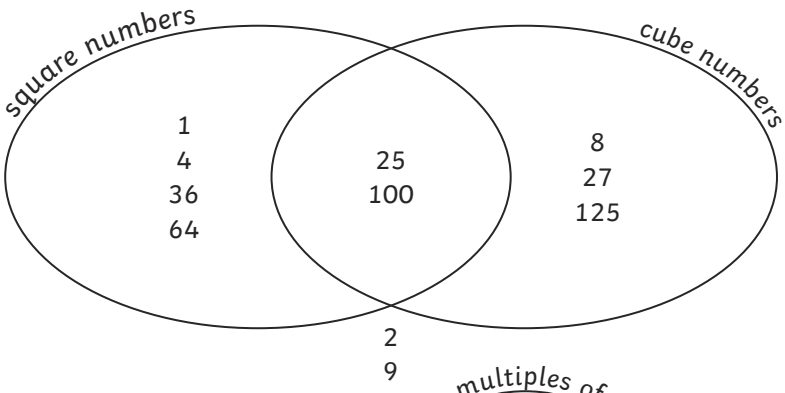
c) 9 × 9 ___ 5^3 ___ 5 × 5 × 5

d) 1 × 1 × 1 ___ 1^2 ___ 1^3

e) 10^2 ___ 4^3 ___ 6^2

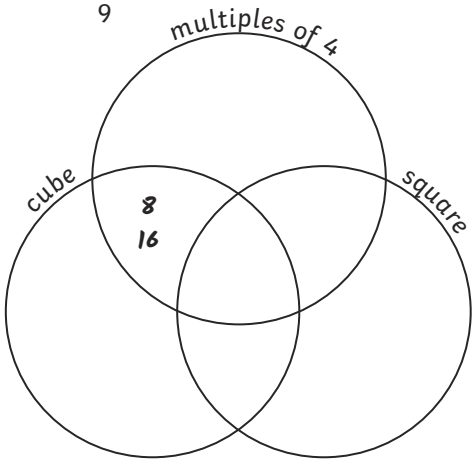
f) 3^3 ___ 5^2 ___ 4 × 4 × 4

1) Angus and Ruby have been asked to sort a group of numbers into the correct places on the Venn diagram. Are the numbers they have sorted so far in the correct places? Explain your reasoning.



2) Angus and Ruby are now looking at a new Venn diagram. Their teacher has asked them to sort these numbers into the diagram: 8, 16, 4, 9, 36, 64, 81, 100 and 27.

Do you agree with the statements Angus and Ruby make? Explain your reasoning.



"I have placed 8 and 16 on the diagram. I think that these numbers are the only ones that will go into this part of the Venn diagram."

"I don't think that any of the numbers will go in the very centre of the diagram."

1) Using only square or cube numbers that are 100 or less, complete these missing number puzzles. Remember that all the numbers you use must be squares or cubes, even the number after the equals sign!

Example:
I could use the numbers 9, 8 and 1 to complete the first missing number puzzle as 9 is a square number, 8 is a cube number and 1 is both a square and a cube number.

8	+	1	=	9	

	+		=			+		=		-	

	-		=			+		=		+	

2) Look back at each of your answers. Is it possible to find more than one solution for each puzzle?