Algebra Inquiry. *Stg E6 - Number* Name: _____

The strange case of Professor Al Gebra and the missing number!

Professor Al had a big problem. One of his most interesting numbers was missing! When he went to look for it, he found a sinister type-written note instead. See if you and your math investigation team can help him find it:

Dear Prof. Al

If you want to see your number again, you must follow these instructions exactly. Do not skip any steps. Do them one at a time, in order.

1. **Discover the number of sides on a heptagon: _____**
2. **What is the square root of 25: _____**
3. **143 take away 88 is: _____**
4. **The number for a 'bakers dozen' _____**
5. **The number missing from this sequence: 3, 6, 9, 12, ___, 18**
6. **The product of 2 x 3 x 4 _____**
7. **The number of sides from the missing shape in this pattern:**

8. **The next number in this sequence: 2, 7, 12, 17, 22, _____**
9. **Two thirds of 24, plus 12 _____**
10. **½ of 16 plus 3 plus 3 plus 3 plus 3 = _____**
11. **Add up all of the answers to the clues you have found so far: _____**
12. **Halve your answer to clue 11 _____**
13. **Multiply the answer to question 12, by the answer to: 3.6 ÷ 3 = _____**
14. **Divide that answer by 10 _____ and name it 'm' for mysterious**
15. **m x 4 = _____ … keep this number, you'll need it!**
16. **Find the missing number in this sequence: 48, 40, 32, ___, 16**
17. **Find one half of the answer to question 16. _____**
18. **Divide the answer to question 17 by the next number in this sequence: 17, 14, 11, 8, 5, _____**
19. **Multiply the answer to question 18 by this missing number: 23439 x ____ = 23439**
20. **Finally, to find your precious missing number, the answer to life the universe and everything, subtract the answer to question 19 from the answer to question 15! The missing number is _____**

Check your answers with other groups too – do they match? Why might some answers be different? How can we figure out number sequences?

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Answers (Don't print this bit!):

1. Discover the number of sides on a heptagon: 9
2. What is the square root of 25: 5
3. 143 take away 88 is: 55
4. The number for a 'bakers dozen' 13
5. The number missing from this sequence: 3, 6, 9, 12, 15, 18
6. The product of 2 x 3 x 4 24
7. The number of sides from the missing shape in this pattern: 6

8. The next number in this sequence: 2, 7, 12, 17, 22, 27
9. Two thirds of 24, plus 12 28
10. ½ of 16 plus 3 plus 3 plus 3 plus 3 = 20
11. Add up all of the answers to the clues you have found so far: 200
12. Halve your answer 100
13. Multiply that, by the answer to: 3.6 ÷ 3 = 1.2 x 100 = 120
14. Divide that by 10 m = 12 and name it 'm'
15. M x 4 = 12 x 4 = 48
16. Find the missing number in this sequence: 48, 40, 32, 24, 16
17. Find one half of the answer to question 16. 12
18. Divide the answer to question 17 by the next number in this sequence: 17, 14, 11, 8, 5, 2 … 12 ÷ 2 = 6
19. Multiply the answer to question 18 by this missing number: 23439 x 1 = 23439 … 1 x 6 = 6
20. Finally, to find your precious missing number, the answer to life the universe and everything, subtract the answer to question 19 from the answer to question 15! The missing number is 48 – 6 = **42**

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