MATHS

BOOKS - MBD

APPENDIX

Example

1. Determine which of the following statements are always true, always false or

ambiguous ? Give suitable reasons to justify your answer : There are 13 months in a year.

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2. Determine which of the following statements are always true, always false or ambiguous ? Give suitable reasons to justify your answer : Deepawali falls on Friday.

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3. Determine which of the following statements are always true, always false or ambiguous ? Give suitable reasons to justify your answer : The temperature in Magadi is $26^{o}C$-.

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4. Determine which of the following statements are always true, always false or

ambiguous ? Give suitable reasons to justify your answer : The Earth has one Moon.

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5. Determine which of the following statements are always true, always false or ambiguous ? Give suitable reasons to justify your answer : The dogs can fly.

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6. Determine which of the following statements are always true, always false or ambiguous ? Give suitable reasons to justify your answer : The month February has 28 days.

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7. Which of the following statements are true and which are false. Give reason in support of your answer. : The sum of interior angles of a quadrilateral is $350 \circ 0$.

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8. Which of the following statements are true and which are false. Give reason in support of your answer. : For any real number x, $x^2 \geq 0$

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9. Which of the following statements are true and which are false. Give reason in support of your answer. : Rhombus is a parallelogram.

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10. Which of the following statements are true and which are false. Give reason in support of your answer. : The sum of two even numbers is an even number.

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11. Which of the following statements are true and which are false. Give reason in support of

your answer. : The sum of two odd numbers is an odd number.

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12. Take any three consecutive even numbers and find their product : For example , 2 x 4 x 6 = 48 4 x 6 x 8 = 192 etc. Form three conjectures of these products.

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13. Let us observe Pascal triangle $1:1=11^0$ $2:11=11^1$ $3:121=11^2$. Form a conjecture for row 4 and row.

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14. Is your conjecture true ? Does your conjecture hold for line 6 ?

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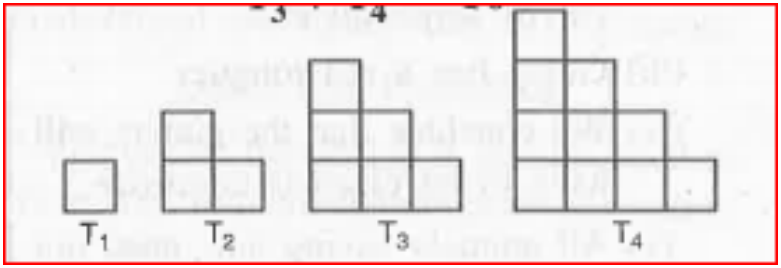
15. Let us observe the triangular numbers (see Fig.). Add two consecutive numbers. For example , $T_1 + T_2 = 4$ $T_2 + T_3 = 9$ $T_3 + T4$ =16



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16. Observe the following pattern :

$$1^2 = 1$$
$$11^2 = 121$$
$$111^2 = 12321$$
$$1111^2 = 1234321$$
$$11111^2 = 123454321$$

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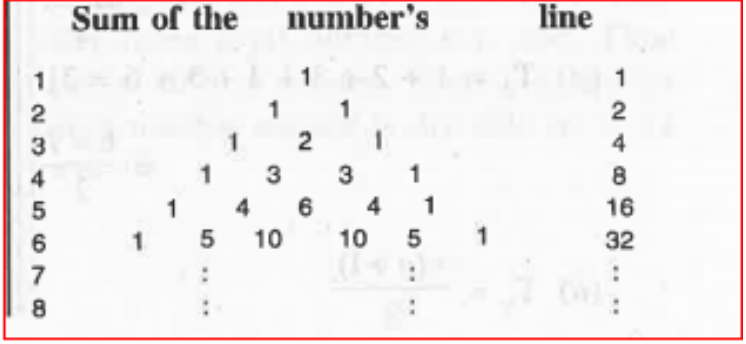
17. Observe the following pattern of numbers which is also called Pascaltriangle :



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18. The moon is about 3,84,000 km from the earth, and its path around the earth is nearly circular. Find the speed at which it orbits earth, assuming that it orbits the earth in 24 hours.

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19. A family pays 1000 for electricity on an average in those months in which it does not use a water heater. In the months in which it uses a water heater, the average electricity bill is 1240. The cost of using the water heater is ? 8.00 per hour. Find the average number of hours the water heater is used in a day.

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20. We have given the timings of the gold medalists in the 400-metre race from the time the event was included in the Olympics, in table below. Contruct a mathematical model relating years and timings. Use it to estimate the timing in the next Olympics.

Table

Year	Timing (in seconds)
1964	52.01
1968	52.03

Year	Timing (in seconds)
1972	51.08
1976	49.28
1980	48.88
1984	48.83
1988	48.65
1992	48.83
1996	48.25
2000	49.11
2004	49.41

Exercise

1. I travelled 432 km by car and 48 litres of the petrol was consumed. I have to go at a place which is 180 km far. How much litres of the petrol is needed for it ?

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2. Let Sudhir invested Rs. 15000 at 8% simple interest. He wants to buy washing machine costing Rs. 19000 with the amount he receives. Determine the time period for which does he invest Rs. 15000 so that he get sufficient money to buy the washing machine ?

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3. A motor boat going upstream in a river travels the distance between two cities in six

hours. The same distance is travelled downstream in a river in 5 hours. If the Year Timing (in seconds) 1972 51.08 49.28 48.88 48.83 48.65 48.83 48.25 49.11 49.41 1976 1980 1984 1988 1992 1996 2000 2004 speed of the river is 2 km/h. Find the speed of boat in still water.

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