

# MATHS

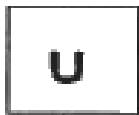
## BOOKS - VIDHYASANGAM - RAO'S ACADEMY MATHS (KANNADA ENGLISH)

### APPENDIX A

#### Exercise A 1 2

1. Once again you are given four cards. Each card has a number printed on one side and a letter on the other side. Which are the only two cards you need to turn over to check whether the following rule holds ?

"If a card has a consonant on one side, then it has an odd number on the other side."



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## Exercise A 1 3

1. Take any three consecutive even numbers and find their product , for example,  $2 \times 4 \times 6 = 48$ ,  $4 \times 6 \times 8 = 192$ , and so on. Make three conjectures about these products.



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2. Go back to Pascal's triangle.

Line 1:  $1 = 11^0$

Line 2:  $1, 1 = 11^1$

Line 3:  $1, 2, 1 = 11^2$

Make a conjecture about Line 4 and Line 5.

Does your conjecture hold ? Does your conjecture hold for Line 6 too ?



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**3. Look at the following pattern :**

$$1^2 = 1$$

$$11^2 = 121$$

$$111^2 = 12321$$

$$1111^2 = 1234321$$

$$11111^2 = 123454321$$

Make a conjecture about each of the following

:

$$111111^2 =$$

$$1111111^2 =$$

Check if your conjecture is true.



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**Exercise A 1 4**

1. Find counter - examples to disprove the following statements :

If the corresponding angles in two triangles are equal, then the triangles are congruent.



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2. Find counter - examples to disprove the following statements :

A quadrilateral with all sides equal is a square.



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3. Find counter - examples to disprove the following statements :

A quadrilateral with all angles equal is a square.



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4. Find counter - examples to disprove the following statements :

For integers a and b,  $\sqrt{a^2 + b^2} = a + b$



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5. Find counter - examples to disprove the following statements :

$2n^2 + 11$  is a prime for all whole numbers  $n$ .



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6. Find counter - examples to disprove the following statements :

$n^2 - n + 41$  is a prime for all positive integers  $n$ .



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**7.** Prove that the sum of two odd numbers is even.



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**8.** Prove that the product of two odd numbers is odd.



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**9.** Prove that the sum of three consecutive even numbers is divisible by 6.



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**10.** Prove that infinitely many points lie on the line whose equation is  $y = 2x$ .



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