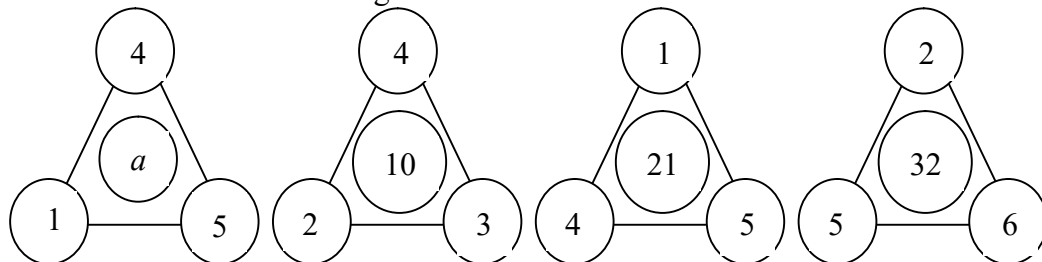


**1982 FI3.1**

下圖中求  $a$  的值。

Find the value of  $a$  in the figure.



**1982 FI3.3**

在以下數列中求  $c$  的值。

Find the value of  $c$  from the sequence:  $\frac{3}{12}, \frac{7}{34}, \frac{c}{56}, \frac{15}{78}$ .

**1982 FG9.1**

在以下數列中求  $A$  的值。

Find the value of  $A$  from the sequence: 0, 3, 8,  $A$ , 24, 35, ...

**1985 FI2.1**

在以下數列中，求  $a$  的值：1, 8, 27, 64,  $a$ , 216, ...

Find  $a$  in the following sequence: 1, 8, 27, 64,  $a$ , 216, ...

**1995 HI1**

求 1234567654321 的平方根。

Find the square root of 1234567654321.

**1997 FI2.1**

考慮：  $\frac{1^2}{1} = 1$  ,  $\frac{1^2 + 2^2}{1 + 2} = \frac{5}{3}$  ,  $\frac{1^2 + 2^2 + 3^2}{1 + 2 + 3} = \frac{7}{3}$  ,  $\frac{1^2 + 2^2 + 3^2 + 4^2}{1 + 2 + 3 + 4} = 3$  ,

求  $a$  的值使得  $\frac{1^2 + 2^2 + \dots + a^2}{1 + 2 + \dots + a} = \frac{25}{3}$  。

By considering:  $\frac{1^2}{1} = 1$  ,  $\frac{1^2 + 2^2}{1 + 2} = \frac{5}{3}$  ,  $\frac{1^2 + 2^2 + 3^2}{1 + 2 + 3} = \frac{7}{3}$  ,  $\frac{1^2 + 2^2 + 3^2 + 4^2}{1 + 2 + 3 + 4} = 3$  ,

find the value of  $a$  such that  $\frac{1^2 + 2^2 + \dots + a^2}{1 + 2 + \dots + a} = \frac{25}{3}$  .

**2000 FI4.3**

已知兩個 12 位數 1111...11 和 9999...99 的乘積中有  $R$  個數字是奇數，求  $R$  的值。

Given that there are  $R$  odd numbers in the digits of the product of the two 12-digit numbers 1111...11 and 9999...99, find the value of  $R$ .

**2004 FI4.4**

已知  $241 \times 462 + 214 = d^2$ ，求  $d$  的正數值。

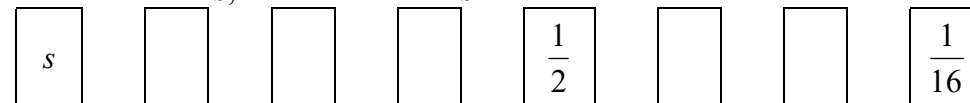
Given that  $241 \times 462 + 214 = d^2$ , find the positive value of  $d$ .

**2006 FI4.3**

如圖一，八個正數排成一列，從第三個數開始，每個數都等於前面兩個數的乘積。已知第五個是  $\frac{1}{2}$ ，而第八個數是  $\frac{1}{16}$ 。若第一個是  $s$ ，求  $s$  的值。

In Figure 1, there are eight positive numbers in series. Starting from the 3<sup>rd</sup> number, each number is the product of the previous two numbers. Given that the 5<sup>th</sup> number is  $\frac{1}{2}$  and the 8<sup>th</sup> number is  $\frac{1}{16}$ .

If the first number is  $s$ , find the value of  $s$ .



**2015 FI1.2**

若  $\beta$  為乘積  $\underbrace{11111 \dots 11}_{10 \text{ 個 } 1} \times \underbrace{99999 \dots 99}_{10 \text{ 個 } 9}$  所有數位的數字之和，求  $\beta$  的值。

If  $\beta$  is the sum of all digits of the product  $\underbrace{11111 \dots 11}_{10 \text{ 1's}} \times \underbrace{99999 \dots 99}_{10 \text{ 9's}}$ ,

determine the value of  $\beta$ .

**Answers**

1982FI3.1 9	1982FI3.3 11	1982FG9.1 15	1985 FI2.1 125	1995 HI1 1111111
1997 FI2.1 12	2000 FI4.4 12	2004 FI4.4 334	2006 FI4.3 $\frac{1}{\sqrt{2}}$	2015 FI1.2 90