# The Answers To:

# Six Of The Best

**Congratulations to our December 2000 Winner:**
**TOM BACKHOUSE**

**1.** The letters on the three dice were:
**AGDS CNPR EIOT**

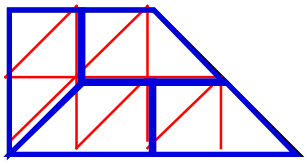
**2.** Give the girls letters A to O - the schedule is then:

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|---|---|---|---|---|---|---|
| ABC | ADE | AFG | AHI | AJK | ALM | ANO |
| DHL | BIK | BHJ | BEG | CDF | BEF | BDG |
| EJN | CMO | CLN | CMN | BLO | CIJ | CHK |
| FIO | FHN | DIM | DJO | EHM | DKN | EIL |
| GKM | GJL | EKO | FKL | GIN | GHO | FJM |

**3.** Calculate 1 111 111 111 x 9 999 999 999 and get:
**1111111108888888889**

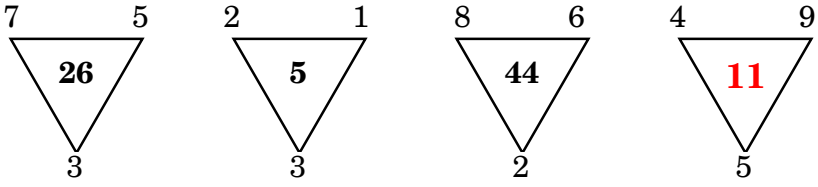
**4.** The pearl necklace had 33 pearls. The value of the central pearl must have been **£3000**. The pearl at one end (from which they increased in value by £100) was £1400. The pearl at the other end, £600.

**5.** The figure below represents two equal squares placed side by side. The second square has been cut in half diagonally:



The puzzle was to cut the figure into **four** identical pieces.

**6.** What was the missing number in Triangle Four?




## *NOTES*

*1. Can be solved by a combination of Logic and Trial and Error*

*2. The famouse Schoolgirls Problem first posed by Reverend Thomas Kirkman in 1857. It led to a new branch of Maths called Combinatorics. The problem has since been described as a specific example of a Steiner Triple System. Numerous methods of solution exist, but Trial and Error still (just!) works for the patient!*

*3. Rather than Long Multiplication (tedious), this can be solved either by recognising the pattern in similar problems (eg 111 x 999), or by treating the larger number as 10 billion and solving it by subtraction.*

*4. Yields readily to Algebraic solution, or as one colleague suggested, trial and improvement using a spreadsheet column of "pearls".*

*5. Give the square a side length of two units, then the figure has an area of six square units (4 + 2). One quarter of this is 1.5 square units, which suggests the solution given.*

*6. The product of the two largest minus the square of the smallest.*

*SOTB Series 5 Nov-Dec 00*
*Stephen Froggatt*