JMC Algebra

1. Granny swears that she is getting younger. She has calculated that she is four times as old as I am now, but remembers that 5 years ago she was five times as old as I was at that time. What is the sum of our ages now?

   A 95   B 100   C 105   D 110   E 115

2. What is the value of the heart symbol if each row and each column has the total given?

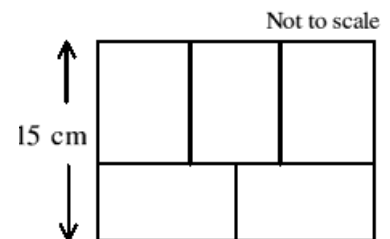 | | | | Total |
   |---|---|---|---|
   | ♥ | ☼ | ♪ | 12 |
   | ♪ | ♥ | ♥ | 11 |
   | ☼ | ☼ | ♪ | 13 |
   | Total | | | |
   | 12 | 11 | 13 | |

   A 3   B 4   C 5   D 6   E more information needed

3. If $a \times b = 2$, $b \times c = 24$, $c \times a = 3$ and a, b and c are all positive, what is the value of $a + b + c$?

   A 7 ½   B 10 ½   C 12   D 16   E 19

4. Five identical rectangles fit together as shown. What, in cm², is the total area which they cover?

   Not to scale

   15 cm

   A 270   B 300   C 330   D 360   E 450

5. In a sequence of positive integers, every term after the first two terms is the sum of the two previous terms in the sequence. If the fifth term is 2004, what is the maximum possible value of the first term?

   A 399   B 400   C 663   D 999   E 1001

6. The currency used on the planet Zog consists of bank notes of a fixed size differing only in colour. Three green notes and eight blue notes are worth 46 zogs; eight green notes and three blue notes are worth 31 zogs. How many zogs are two green notes and three blue notes worth?

   A 13 zogs   B 16 zogs   C 19 zogs   D 25 zogs   E 27 zogs

Solutions

1. B
2. A
3. B
4. A
5. D
6. C