

Weekly Quiz

Questions:

Week 14 – Solutions to the maths office by Thursday 09th December

1. The children's toy has broken. Alex says Barbara broke it. Barbara says Clare broke it. Claire and David say they do not know who broke it. Everybody is telling the truth except the one who broke the toy: who was that?
2. One quarter of an original number is 24. What is one third of the original number?
3. Mrs Thwaites is buying Christmas presents for her six children to give to one another. Each child gives a present to each of the others. How many presents must she buy?
4. A garden pond is shaped as a polygon with 12 equal sides each at right angles to its adjacent side. Draw a plan of the pond.
The perimeter of the pond in metres is equal to its area in square metres. Find its size?
5. Does 3 divide exactly into $3^{333} + 5^{555}$? Does 3 divide exactly into $3^{333} + 6^{555}$?
6. Which of the numbers from 2 to 10 inclusive would divide exactly into 12^{2004} ?

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Solutions:

Week 14 – 02/12/04

1. If A is telling the truth then B broke the toy and is lying. This means that C did not do it and C and D could well not know who did it. Therefore B broke the toy.

2.

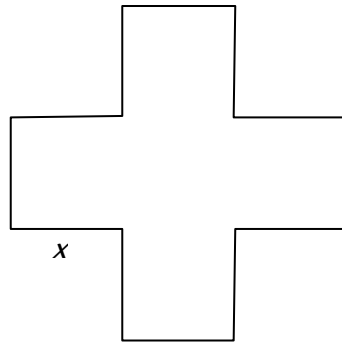
$$\frac{1}{4} \times x = 24$$

$$x = 96$$

$$\frac{1}{3} \times 96 = 32$$

3. Six children get each give to 5 others. Therefore 30 presents.

4.



$$\text{Perimeter} = 12x$$

$$\text{Area} = 5x^2 \quad \text{Therefore } x = \frac{12}{5}m$$

$$\text{So Area and perimeter} = \frac{144}{5} \text{ (m}^2 \text{ or m)}$$

5. $3^{333} + 5^{555}$ is not divisible by 3 but $3^{333} + 6^{555}$ is because both number are divisible by 3.

6. 12^{2004} not divisible by 5, 7 or 10.