

# Number Nest Weekly Challenge



## Warm up

1. What is  $100 \times 25$ ? **2500** So what is  $99 \times 25$ ?  **$99 \times 25 = 100 \times 25 - 25 = 2475$**
2.  $(48 \div a) + 4 = 12$  What is **a**? **a = 6**
3. What is  $5984 \times 34$ ? Use long multiplication. **203456**
4. How many minutes are in 4.5 Hours?  **$60 \times 4.5 = 270$**
5. Round 149 to the nearest hundred. **100**
6. Find the difference between 1967 and 3023. **1056**

## Activity

1. Xiao Ming is a leaping (he was born on February 29th). By 2017, he has had 7 birthdays where he celebrated on February 29th. Which year was Xiao Ming born in?

**2016 is the closest leap year → Xiao Ming had one of his birthday celebrations. Leap year occurs every 4 years (with some exceptions).**

**$7 \times 4 = 28$  years, so  $2016 - 28 = 1988$ . Xiao Ming was born in 1988.**

A leap year has 366 days with an extra day on February 29th. A year is a leap year if it's divisible by 4 or 400, but not 100. E.g. 1600 is a leap year, but 1700 is not.

2. Fill in the missing space using  $\times$ ,  $\div$ ,  $+$ ,  $-$ .

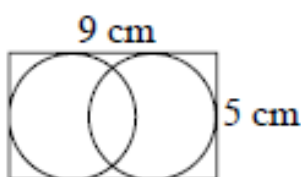
$$\frac{5}{9} \times \frac{3}{10} + \frac{5}{6} = 1$$

When multiplying fractions, you times together the numerators on the top and the denominators at the bottom.

So:

$$\frac{1}{2} \times \frac{5}{3} = \frac{1 \times 5}{2 \times 3}$$

3. The diagram shows two circles enclosed in a rectangle measuring 9 cm and 5 cm. What is the distance between the centres of the circles?



**The width of the rectangle is twice the radius of the circle, therefore  $r = 2.5$  cm**

**$9 - 2.5 \times 2 = 4$  cm. Distance between the centres of the circle is 4 cm.**

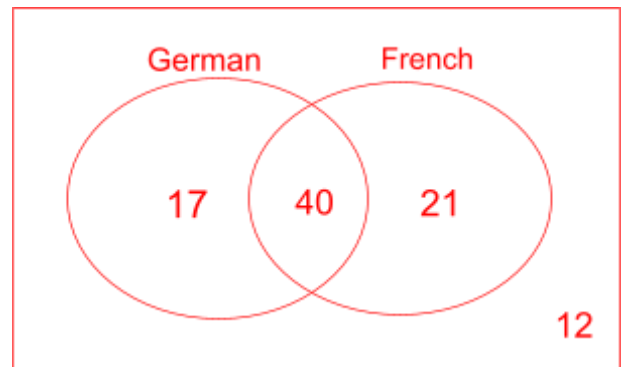


4. At school, students can take German or French. There are 90 students in total, 57 students study German and 61 students study French. Given that 12 students don't study either subjects, how many students take German and French? (Drawing a Venn diagram might be helpful!)

**Let  $x$  be the number of students studying both subjects.**

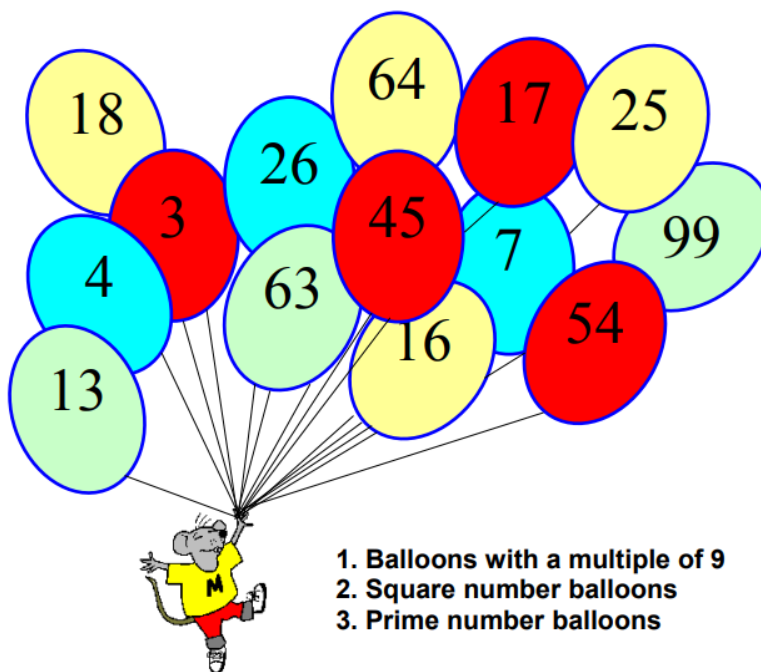
**Then:  $(57-x) + x + (61-x) + 12 = 90$**

**Hence  $x = 40$**



### Puzzle

Pop the balloons with numbers that match any of the conditions below.  
Which balloon is left?



**Balloon 26!**

1. Balloons with a multiple of 9
2. Square number balloons
3. Prime number balloons