

24.06.24

Number Nest Weekly Challenge



Warm up

1. Find the area and perimeter of a rectangle width 6m, length 2m.

Perimeter - 16m

Area - 12m

2. Find 25% of £30.48 £7.62
3. What is £10.23 written in pence? 1023p
4. $3 \times 9 \frac{1}{3} =$ 28
5. What is 57 subtract - 19? 76
6. How many cm is 84mm? 8.4cm
7. Multiply the sum of 21 and 7 by 8. 224
8. What length is 6 times longer than 2.5m? 15m

Activity

1. My train was scheduled to leave at 16:48 and to arrive at my destination at 17:25. However, it started four minutes late, and the journey took twice as long as scheduled. When did I arrive?

The scheduled leaving time of 16:48 is 12 minutes before 17:00, so the journey time, in minutes, should have been $12 + 25 = 37$.

So the actual journey time, in minutes, was $2 \times 37 = 74$, that is 1 hour 14 minutes. Now the train left 4 minutes late, so the leaving time was 16:52.

Therefore the arrival time was 1 hour 14 minutes later than 16:52, that is 18:06.

2. Nicola made a cake and kept $\frac{1}{4}$ of it for herself. She gave the rest to Kay, Rosie, Mick, Naomi, Joe and Emily to share equally between the six of them. How much of the original cake did Mick get?

Three-quarters of the cake is to be divided into six equal slices.

This is $\frac{3}{4} \div 6 = \frac{3}{24} = \frac{1}{8}$

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3. Patrice was measuring the water wasted by a dripping tap over a week. He noticed that over the weekend it leaked 250 ml and that on each weekday it leaked 100 ml. How many litres of water were wasted over the week?

Over the weekend, 250 ml was lost. In the five weekdays $5 \times 100 = 500$ ml were lost. This gives a total of $750 \text{ ml} = 0.75 \text{ l}$.

4. To save money, Jimmy reuses tea bags. After a first 'good' cup of tea, he dries the teabag and uses two such dried bags to make a new 'good' cup of tea. These bags are then dried again and four such bags now make a 'good' cup of tea. After that they are put on the compost heap. How many 'good' cups of tea can Jimmy get out of a new box of 120 tea bags?

As 120 is a multiple of 4, Jimmy is able to use all of the tea bags when he uses two dried tea bags per cup and when he uses four dried tea bags per cup.

Hence the required number of 'good' cups of tea is $120 + 120 \div 2 + 120 \div 4 = 120 + 60 + 30 = 210$.

Puzzle

Find the values of the shapes. The shapes are whole numbers.

1.

$$\text{Hexagon} + \text{Circle} = 7$$

$$\text{Circle} + \text{Circle} = 6$$

$$\text{Square} \cdot \text{Hexagon} = 20$$

$$\text{Hexagon} = 4$$

$$\text{Circle} = 3$$

$$\text{Square} = 5$$