





Term 3 Homework 1

It's the last day of my holiday. It's roasting- so warm that I pull the chain to get the ceiling fan going. Nothing happens.



It's only then I realise there's been a power cut. And two hours later, when we're about to leave our villa, the power is still down. When power is restored, the fan will be on. That's a waste. But I can't remember how many settings there are on the fan. The fan doesn't have a model number but when I Google the manufacturer's website I find that they only make four different fans, with different speed settings (low, medium, high, very high) that you cycle between as you pull the chain.

Fan	Speed Settings	Cycle Options
Fan A		(Medium/Off)
Fan B		(Low/Medium/Off)
Fan C		(Low/Medium/High/Off)
Fan D		(Low/Medium/High/Gale Force/Off)

How can I make sure the fan will be in the "off" position when the power is restored after we have left for home?

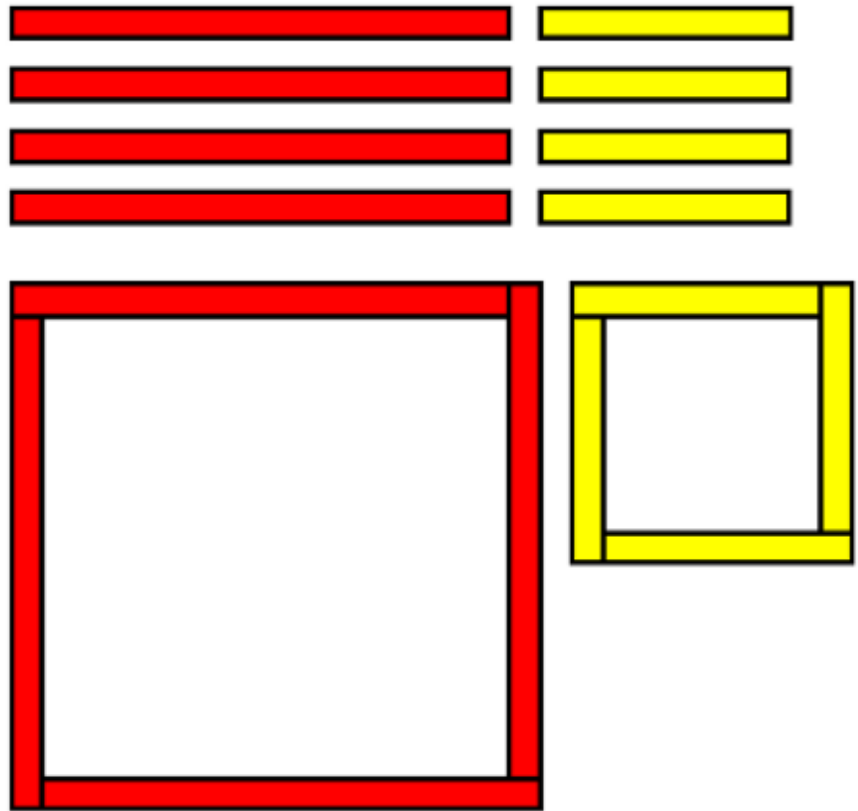
Term 3 Homework 2



A 40 kg rock was used to weigh things on a balance scale. The rock was dropped and it broke into four pieces. Using combinations of the four pieces all the whole number weights from 1 to 40 kg could be weighed on the balance scale. What is the weight of the largest piece?

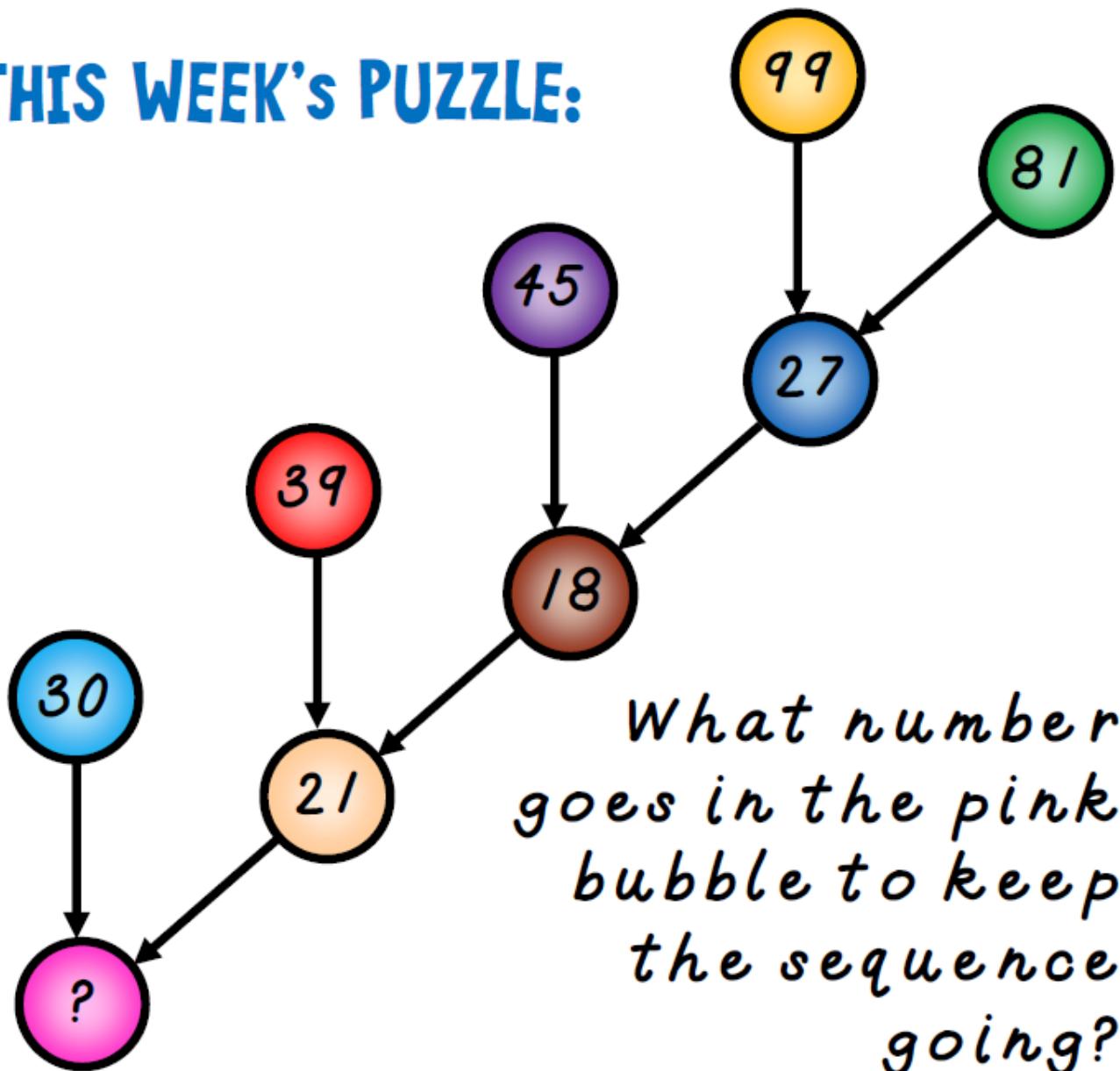
Term 3 Homework 3

The red strips are twice as long as the yellow strips. The eight can be assembled to form two squares of different sizes. How can they be rearranged (in 2-dimensions!) to form three squares of equal size?



Term 3 Homework 4

THIS WEEK'S PUZZLE:



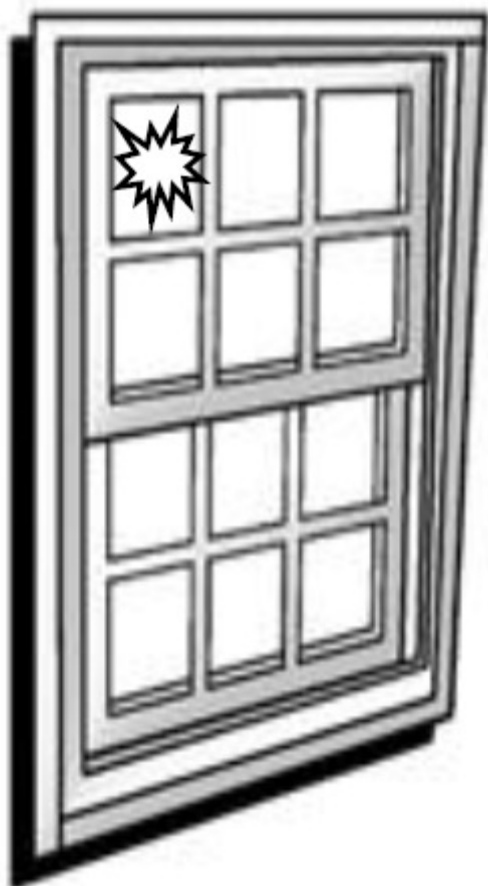
Term 3 Homework 5



What's the smallest number of grannies that can walk in this order:

two grannies in front of a granny,
two grannies behind a granny,
and a granny between two grannies?

Term 3 Homework 6

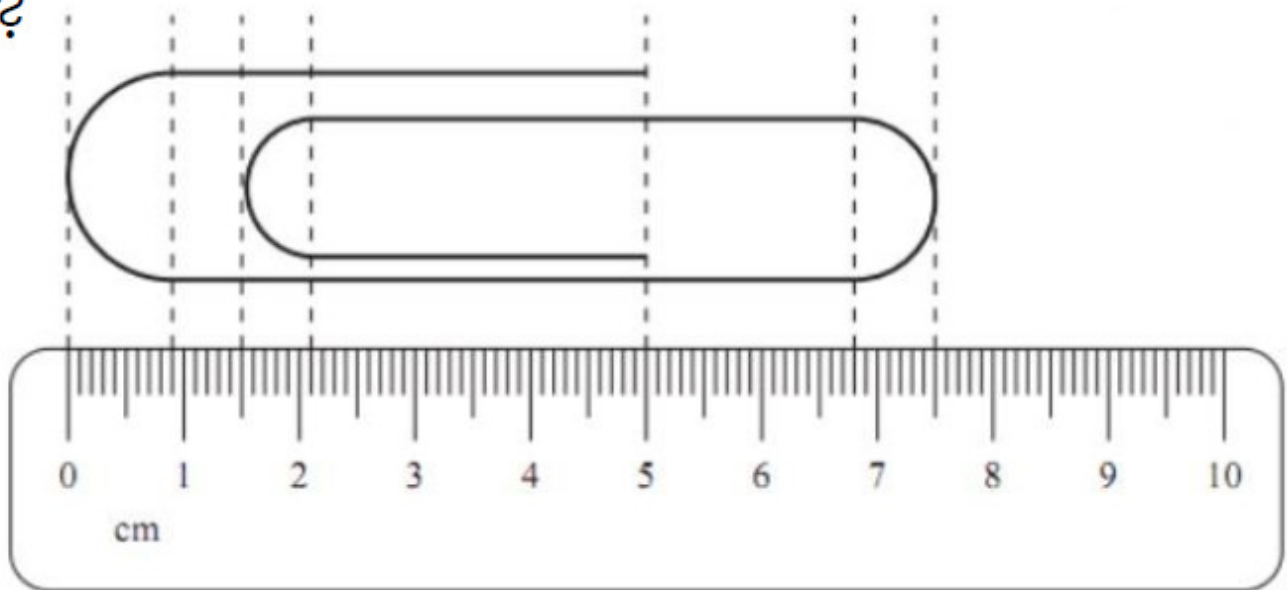


Some vandals had spray-painted numbers onto this window round the corner from where we stay. Even though the top left pane was smashed I still spotted a pattern in the remaining 11 panes. Each number

was twice as big as the number to its left and three times as big as the number above it. I added up the numbers on each pane and they totalled 79,236. What number should have appeared in the top left pane?

Term 3 Homework 7

This diagram, not to scale, shows a giant paperclip with semi-circular ends. How much metal *exactly* is needed to make it?



Remember: Circumference = π x diameter

Term 3 Homework 8

A sphere-stacking problem seems appropriate this week! A pile of melons are arranged to make a square based pyramid by having one melon on the top layer, four melons on the second layer, nine melons on the third layer, and so on...If there were one thousand melons in the pile used to make the pyramid not all of them would be needed. How many melons would be left over?

