Math At Home!

May 19, 2020
Edition 3

We are getting close to the home stretch of the school year, even though it sure has a different feel. Let's keep those minds "mathy"!

Riddles:

1. Gulliver was travelling with a lettuce, a fox and a rabbit. He came to a river he could not wade across. He found a log that was just large enough to allow himself and the lettuce or himself and one of the 2 animals to cross at a time. He couldn't leave the lettuce with the rabbit or the fox with the rabbit. How can he safely transport the rabbit, the fox and the lettuce across the river?

2. Candy Barr has 5 bags of candy to give to her nieces. Four of the bags total 84. The fifth bag contains 4 less candies than the average of the 5 bags. How many candies are in the fifth bag?

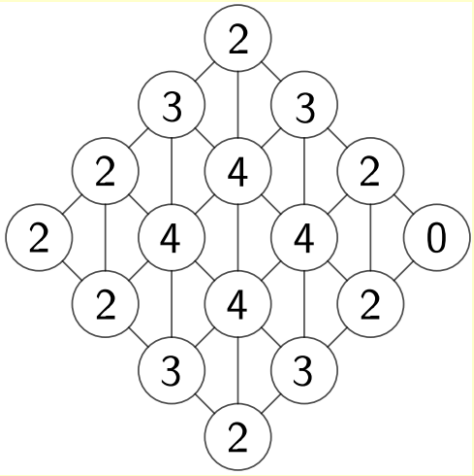
3. Many years ago, a man went to town with $50 cash but returned home with $150 cash. He bought a hat at a clothing store and some apples at a market. Then he had his eyes tested. He gets paid every Thursday by cheque. The banks are only open on Tuesday, Thursday and Saturday and the eye doctor is closed on Saturday. The market is closed Thursday and Friday. What day did he go to town?

Where is the Water?

The sixteen Islands of Math are represented by the circles shown in the diagram below. The lines between the islands represent bridges. Each bridge connects the two islands attached to it. Two islands are said to be *adjacent* if they are connected by a bridge.

Not every island has water. The number on each island indicates the number of islands adjacent to it that have water.

For each island, determine whether it has water (w) or no water (n).

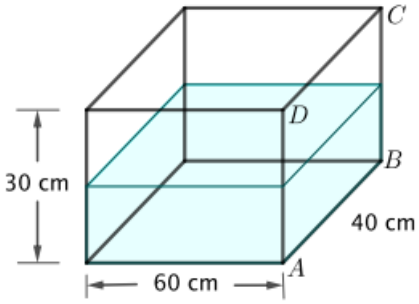


Find the Depth of the Water

New Depths

The rectangular base of an aquarium is 40 cm by 60 cm, and its height is 30 cm. The aquarium is tilted along AB until the water completely covers the end $ABCD$. At this point, it also covers $\frac{4}{5}$ of the base.

Determine the depth of the water, in centimetres, when the aquarium is level.



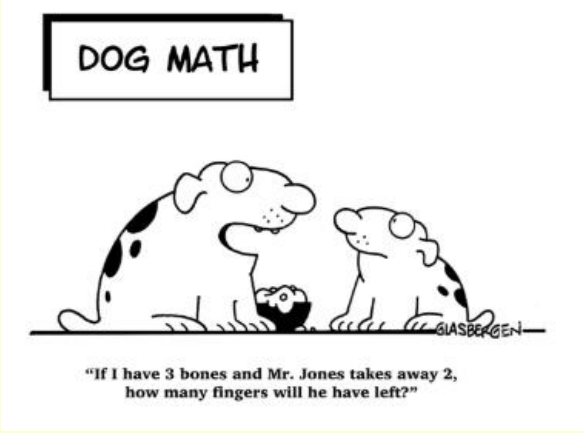
Hint: The volume of a triangular prism is V = Base Area x Height

What's the Digit?

What is the last digit in the number 3^{2018}? Hint: Look for patterns in the powers of 3!

YouTube Link

Mathematics and the Coronavirus:
https://www.youtube.com/watch?v=mTvKQYTV0Yw



Answers for these will be in Edition 4. Stay safe and practice social distancing!