

"Math Is Cool" Championships — 2017-18

4th Grade — March 16, 2018

Team Multiple Choice Contest

Once all the visitors and Zookeepers have left for the night, the animals at the MathLand Zoo come out to play! Work together with your team to solve these problems about their nightly antics.				
USE THE FOLLOWING INFORMATION TO SOLVE PROBLEMS #1 THROUGH #4. The table at right lists information about MathLand Zoo's Primates.	Name	Primate Type	Height	Weight (lbs)
	Archimedes	Orangutan	4 ft, 0 in.	170
	Babbage	Orangutan	4 ft, 3 in.	200
	Copernicus	Chimpanzee	3 ft, 6 in.	?
	Descartes	Chimpanzee	3 ft, 9 in.	130
	Euclid	Chimpanzee	2 ft, 10 in.	75
1	What is the difference in height between the tallest primate and the shortest primate? Answer in inches. A) 9 B) 14 C) 17 D) 21 E) Answer Not Given			
2	The average weight of the primates is 150 lbs. How many pounds does Copernicus weigh? A) 125 B) 140 C) 160 D) 175 E) Answer Not Given			
3	The primates stand on each other's shoulders to escape their enclosure. If one of the orangutans must stand at the bottom of this "primate tower," in how many different arrangements could they stand? A) 24 B) 48 C) 60 D) 120 E) Answer Not Given			
4	Babbage had picked the zookeeper's pocket to steal the key ring with 100 different zoo keys. The primates take this key ring over to the ice cream shop, which has a single lock on its door. The primates take turns trying different keys in the lock. Archimedes tries the 1st key, Babbage tries the 2nd key, Copernicus tries the 3rd key, Descartes the 4th key, and Euclid the 5th. They keep taking turns in this same order, trying different keys in the lock. If the door unlocked with the 57th key, who unlocked it? A) Archimedes B) Babbage C) Copernicus D) Descartes E) Euclid			

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USE THE FOLLOWING INFORMATION TO SOLVE PROBLEMS #5 THROUGH #7.

Once the zoo is quiet for the evening, the sloths have a dance party. The table at right lists songs they like.

Songs by <i>Imagine Dragons</i>	Song Length
"Believer"	3 minutes, 21 seconds
"Radioactive"	3 minutes, 6 seconds
"On Top of the World"	3 minutes, 42 seconds

5 The sloths play their favorite Imagine Dragons songs over and over. If they play each of the three songs listed in the table 4 times, how many seconds will their dance party last?

- A) 609 B) 1716 C) 2036 D) 2426 E) Answer Not Given

6 Sloths like to dance slow. How many seconds long would the song "Radioactive" last, if the sloths played it at one-third its normal speed?

- A) 558 B) 603 C) 186 D) 62 E) Answer Not Given

7 The sloths take turns dancing with each other, dancing exactly one time with every other sloth in their group. If there are 15 sloths in their group, how many dances took place?

- A) 14 B) 30 C) 60 D) 105 E) Answer Not Given

ANSWER QUESTIONS #8 THROUGH #10.

8 The reindeer are playing games. They all play tag, kickball, and/or video games. 8 reindeer like playing tag, 10 like playing kickball, and 5 like playing both tag and kickball. 6 reindeer only like to play video games, and nothing else. How many reindeer are there?

- A) 14 B) 19 C) 24 D) 29 E) Answer Not Given

9 Lovelace the Lemur discovers that all 7 of the ring-tailed lemurs have a different number of rings on their tails, though every lemur has at least 1 tail ring. The average number of rings for the group is 6, and the median number of rings is 5. What is the greatest number of rings that one of the lemurs could have on its tail?

- A) 35 B) 18 C) 14 D) 6 E) Answer Not Given

10 The penguins are cold, so they turn the enclosure temperature up to 90 degrees Fahrenheit. This causes their ice floe to melt! Their ice floe started as a rectangular prism that was 6 feet wide, 8 feet long, and 1 foot deep. The width, length, and depth of the ice floe are each now half their original size. How many cubic feet of ice have been lost from the ice floe?

- A) 6 B) 12 C) 24 D) 42 E) Answer Not Given