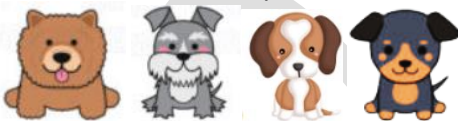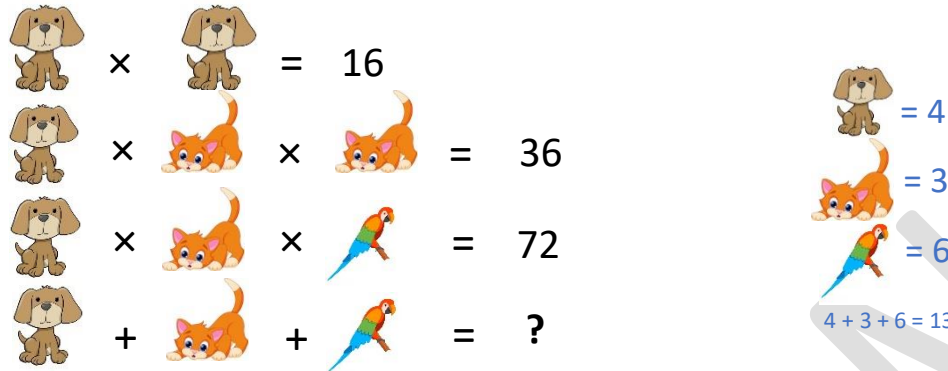| First Name: _____ | Last Name: _____ | Grade: _____ |
| Teacher: _____ | Parent's email: _____ | |

Dogs and Cats

Kinder & First Grade: solve <u>at least</u> 3 problems.
Second & Third Grade: solve <u>at least</u> 7 problems.
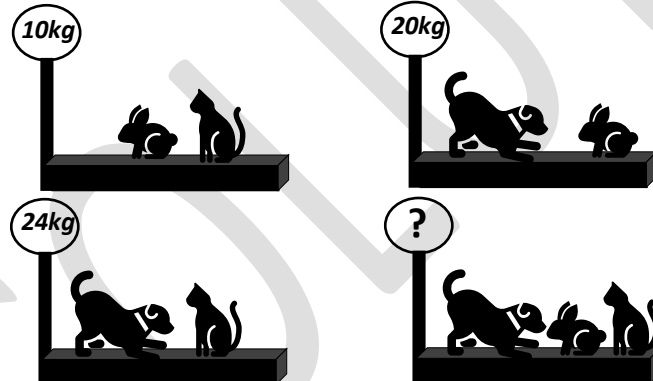**Fourth Grade and above: solve <u>at least</u> 12 problems.**

Answer

1.	Who has the most legs, a flamingo, a fish or a cat?	*A cat*
2.	There are four dogs lining up nicely in a row: Archimedes, Zeus, Lotus and Madura. Archimedes has one neighbor, and it is not Zeus. Lotus also has only one neighbor. Who is Lotus' neighbor?	*Zeus*
3.	If there are 10 houses on your street and all but 1 have a pet, how many homes have pets?	*9*
4.	Ella made 16 homemade treats for her two dogs. She gave 2 treats to Marcy the Maltesse and 3 treats to Phoenix the Poodle. How many treats did she have left?	*11*
5.	Four children (Amanda, Bianca, Cody and Donovan) have different pets (bird, cat, dog and fish). Bianca's pet can't fly. Cody's pet has fur, so does Donovan's. Donovan's pet does not bark. Find out who had which pet. You may use the chart below to work out your solution.	*Amanda's pet: <u>bird</u>* *Bianca's pet: <u>fish</u>* *Cody's pet: <u>dog</u>* *Donovan's pet: <u>cat</u>*

	Bird	Cat	Dog	Fish
Amanda				
Bianca				
Cody				
Donovan				

6.	Betsy the Poodle weighs 9 pounds less than Poochie. Poochie weighs twice as much as Billy. If Billy is 14 pounds, how heavy is Betsy in pounds? *Poochie = 28 pounds* *Betsy is 9 pounds less than Poochie: 28 – 9 = 19 pounds*	*19 [pounds]*
7.	Amina works at a dog shelter near her house. The dog shelter has between 50 to 80 dogs in total. When Amina groups them by 4, there are 3 dogs left. When she groups them by 7, there is 1 dog left. How may dogs does the shelter have? *Write down multiples of 4 and add 3 (because we have R3), multiples of 7 add 1 (R1) between 50 and 80. Only 71 works for both clues.*	*71 [dogs]*

8.	Lisa went to buy some dog treats and dog toys. Dog treats were on sale; each bag cost $12. Dog toys were also on sale; each toy cost $7. Lisa spent exactly $100 at the store. a. How many bags of dog treats did she buy? *6* b. How many dog toys did she buy? *4* *6 x $12 + 4 x $7 = $72+$28 =$100*	*a. 6 [bags of treats]* *b. 4 [toys]*

9.	= 4 = 3 = 6 *4 + 3 + 6 = 13*	**?** *= 13*

Dog × Dog = 16

Dog × Cat × Cat = 36

Dog × Cat × Parrot = 72

Dog + Cat + Parrot = ?
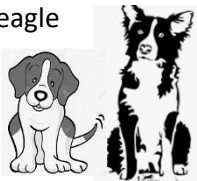
10.	All the neighbors on Doreen's street have pet hamsters, turtles, and parrots. If the hamsters and turtles add up to 16, the turtles and parrots add up to 10, and the hamsters and parrots add up to 8, how many of each pet are on Doreen's street? *H + T = 16* *T + P = 10* *H + P = 8* *Add all three quantities (equations) together, you will get **two sets of** H + T + P = 34. Which means there were 17 pets on the street in total. Now you can work backward. If there were 17 in total, it means there was only 1 parrot (from the first equation), 9 turtles (from the second), 7 hamsters (from the third)*	*Hamsters: 7* *Turtles: 9* *Parrots: 1*

11.	Find the total weight of the rabbit, dog and cat in the picture below: *If we add the known weights: 10 + 20 + 24 = 54 kg (this is the total weight of 2 rabbits, 2 cats, and 2 dogs).* *Thus, 1 rabbit, 1 cat and 1 dog weigh 27 kg.*	*27 [kg]*

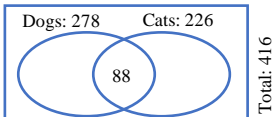|		
12.	Sofie made 2005 homemade dog treats . She packed dog treats in bags of either 5 or 12. What is the smallest number of full bags required to pack exactly 2005 treats? *If she packs them in bags of 12, she would have 167 bags, with remainder 1 treat.* *If she uses 166 bags, there will be 13 treats left (not a multiple of 5)* *If she uses 165 bags, this will leave 25 bars (multiple of 5) which can be packed into 5 smaller bags.* *Total number of bags = 165 + 5 = 170*	*170 [bags]*

13.	Laura feeds her collie 3 cups of dog food each day, and she feeds her beagle 12 cups of dog food each week. If Laura buys a bag of dog food containing 75 cups and feeds both dogs for two weeks, how many cups of dog food will be left in the bag? *Beagle eats 21 cups per week. Together two dogs eat 33 cups per 1 week, or 66 in two weeks. 75 – 66 = 9 cups left*	*9 [cups]*

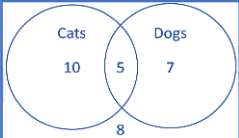| 14.	In a community of 416 people, each person owns a dog or a cat or both. If there are 278 dog owners and 226 cat owners, how many of the dog owners own no cat? Dogs: 278 Cats: 226 88 Total: 416 *People who own both a dog and a cat:* *(278 + 226) – 416 = 504 – 416 = 88* *People who own a dog only: 278 – 88 = 190 people*	*190 [people]*

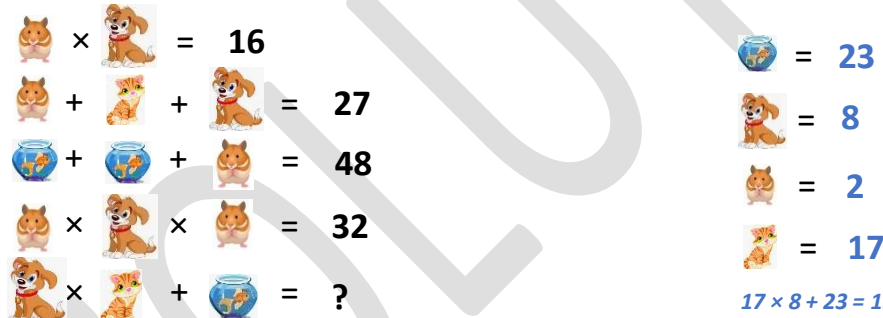| 15.	In a class of 5th grade students, 15 have pet cats, 12 have pet dogs, 5 have both cats and dogs, and 8 have neither cats nor dogs. How many total students are in the class? *We can calculate the number of students who have ONLY cats or ONLY dogs.* *First, for cats, 15 students have cats, and 5 students have both cats and dogs.* *15–5=10. So, ten students have only cats.* *For dogs, 12 students have dogs, and 5 students have both cats and dogs.* *12–5=7. So, seven students have only dogs.* **10 + 7 + 5 +8 = 30** Cats 10 5 Dogs 7 8	*30 [students]*

16.	One week, Charles spent $43 on 3 bags of Frisk-o-Treats and 4 bags of Savory Salmon treats for his cats. The next week he bought 3 bags of Frisk-o-Treats and 6 bags of Savory Salmon treats for $54.00. Based on this information, figure out the price of one bag of each type of cat food. *Notice that 2 bags of Savory Salmon cost $54 - $43 = $11. Therefore, 1 bag of Savory Salmon is $5.50. Since 3 bags of Frisk-o-Treats and 4 bags of Savory Salmon cost $43, we can find the cost of 1 bag of Frisk-o-Treats:* *(3 x the cost of 1 bag Frisk-o-Treats) + ($5.50 x 4) = $43 → 1 bag of Frisk-o-Treats = ($43 - $22)/3 = $7.*	*Frisk-o-Treats: $7.00 each* *Savory Salmon: $5.50 each*

17.	🐹 × 🐕 = **16** 🐹 + 🐈 + 🐕 = **27** 🐠 + 🐠 + 🐹 = **48** 🐹 × 🐕 × 🐹 = **32** 🐕 × 🐈 + 🐠 = **?** 🐠 = **23** 🐕 = **8** 🐹 = **2** 🐈 = **17** *17 × 8 + 23 = 159*	*159*

18.	Kevin is given $100 to buy fish pets. He must spend all the money and he must buy 100 fish. He must also choose at least one of each fish pet. The fish pets and their prices are: Guppies @ $0.25 each Blue Damsels @ $1.00 each Yellow Tangs @ $15.00 each How many Guppies, Blue Damsels, and Yellow Tangs must Kevin buy? *g = number of guppies* *d = number of blue damsels* *t = number of yellow tangs* *g + d + t = 100* *(0.25g)+ d + 15t = 100* *If we subtract these two equations, we get: 14t – (3/4)g = 0* *56t = 3g → g = (56/3)t. Which means the number of yellow tangs is a multiple of 3.* *We can try t = 3, which give us g = 56. Then c must be 100-(56+3) = 41.* *The other multiples of 3 will not work, because then we'll have only guppies more than a hundred.* *So, the only solution is Guppies = 56, Blue Damsels: 41, Yellow Tangs 3*	*Guppies: 56* *Blue Damsels: 41* *Yellow Tangs: 3*

Solution is available on November 6, 2020 at www.mathinaction.org