

Kansas City Area Teachers of Mathematics
2015 KCATM Contest

Mathletics

Grade 4

Instructions:

- Do **NOT** turn this page until instructed to do so.
- WRITE YOUR **TEAM NUMBER** AND **SCHOOL NAME** ON THE LINE PROVIDED ON THE FRONT OF EACH SHEET EACH TIME YOU BEGIN A NEW PROBLEM.
- You will want to use a calculator on this test, but **NO cell phones calculators can be used!**
- Blank scratch paper can be used. Please do **NOT** write on the team number card, as they are reused each year.
- You may **not** use rulers, protractors or other measurement devices on this test.

Problems # 1-3

This is a relay problem.

Team Number: _____ School: _____

Students: _____

Problems 1-3 (3 minutes, 3 points)

1. How many numbers between 200 and 400 begin or end with 3?

Answer: _____

2. The Smith family went on a spring break road trip that was 5 times the answer to #1 or _____ miles. If their car gets 20 miles per gallon and the cost of gas is \$2.50, how much did fuel cost for the trip?

Answer: _____

3. If the sales tax in your city is 8.75%, and the amount spent on groceries is the answer from problem #2 _____, **what is the total cost** after tax is added to the bill? **Round your answer to the nearest cent.**

Answer: \$ _____

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Problem # 4

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Team Number: _____ **School:** _____

Problem 4 (2 points, 2 minutes)

A fourth of a long stick is painted red. Two-thirds is painted blue and the remaining two feet is painted yellow. **How long is the stick?**



ANSWER: _____

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Problem # 5

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Team Number: _____ **School:** _____

Problem 5 *(2 point, 2 minutes)*

If the digits 6, 5, 4, 3, 2, 1 are written in that same order over and over again, **what will be the 345th digit?**

ANSWER: _____

TEAM #: _____ **School Name** _____

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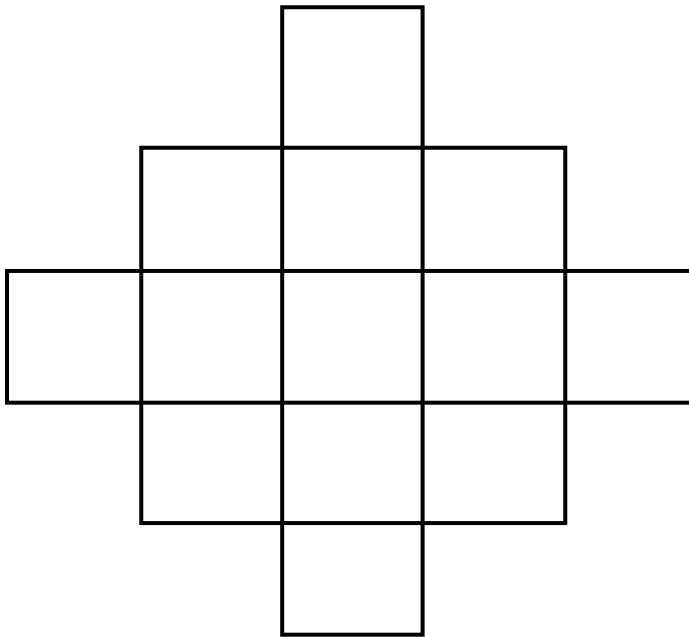
Problem # 6

Do NOT turn the page until you are told to do so.

Team Number: _____ School: _____

Problem 6 (2 minutes, 2 points)

How many squares are in the figure?



ANSWER: _____

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Problem # 7

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Team Number: _____ **School:** _____

Problem 7 (3 minutes, 3 points)

Umar has 6 large marbles and 14 small marbles. One large marble weighs the same as 3 small marbles. The weight of all 20 marbles is 80 ounces.



What is the weight of 2 large marbles plus 4 small marbles?

ANSWER: _____ **ounces**

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Problem # 8

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Team Number: _____ **School:** _____

Problem 8 (2 points, 2 minutes)

What is the value of x if:

$$\frac{x}{2} + 75 = 2x$$

ANSWER: _____

TEAM #: _____ **School Name** _____

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Problem # 9

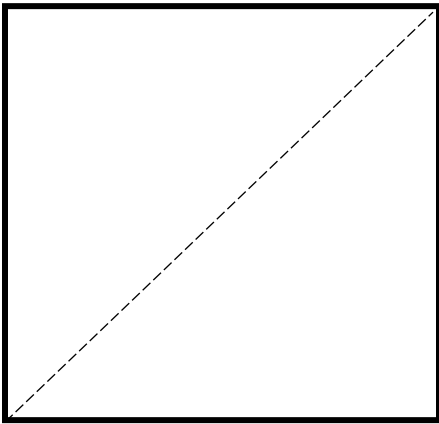
Do NOT turn the page until you are told to do so.

Team Number: _____ **School:** _____

Problem 9 (2 points, 2 minutes)

A diagonal divides a square into two triangles each of which an area of 18 square centimeters.

What is the perimeter of the square in centimeters?



ANSWER: _____ cm

TEAM #: _____ **School Name** _____

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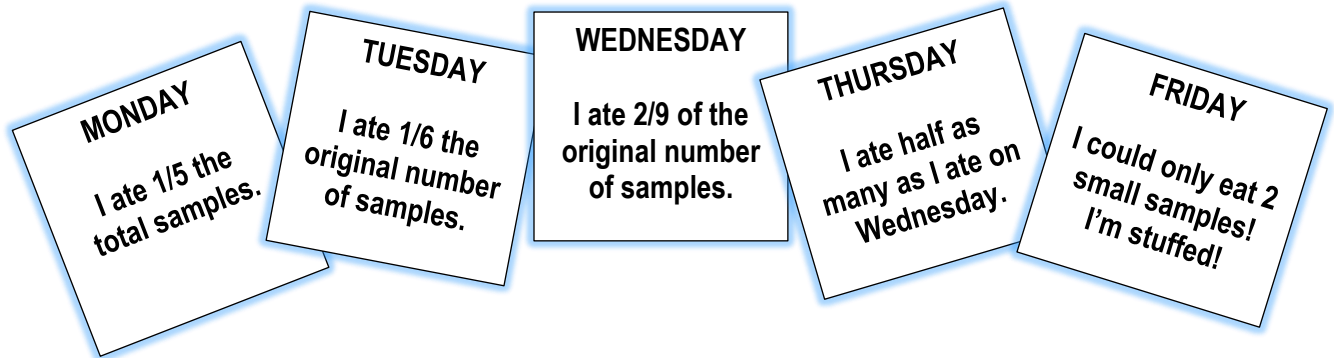
Problem # 10

Do NOT turn the page until you are told to do so.

Team Number: _____ **School:** _____

Problem 10 (3 points, 3 minutes)

You ordered samples from the world's best candy makers. You intended to eat all the samples in one week. 😊 The following is your journal on what you ate each day.



There were 160 candy samples left at the end of the week.

How many samples were originally delivered?

ANSWER: _____

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Problem # 11

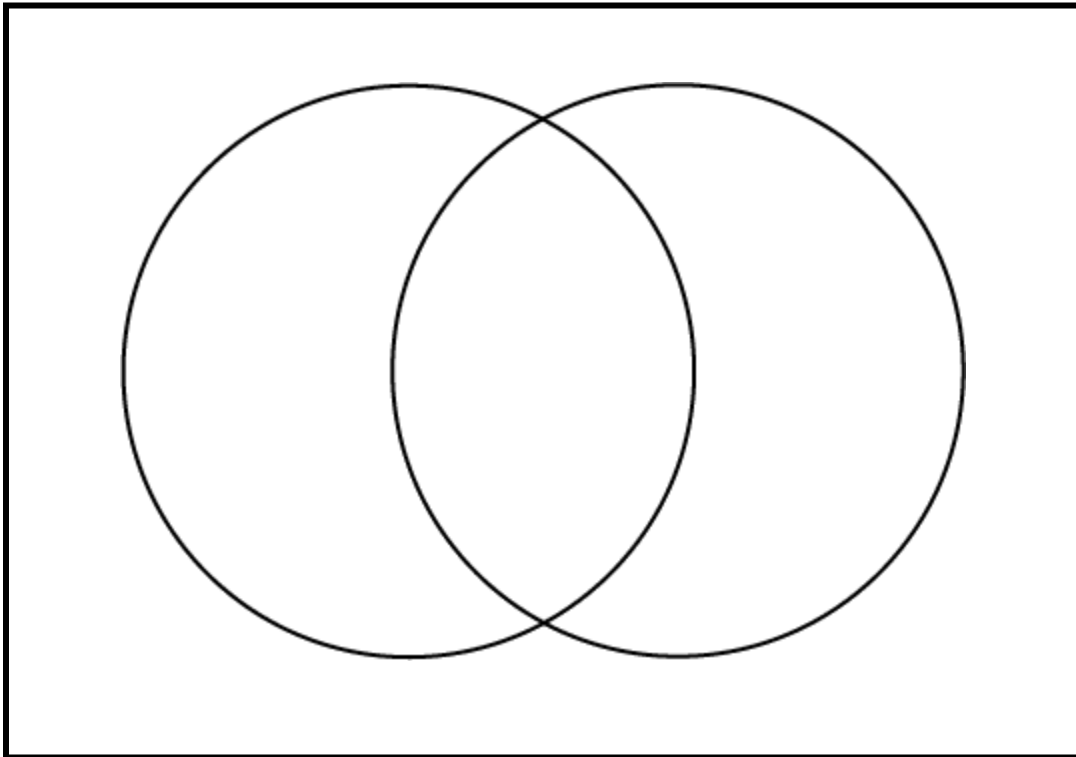
Do NOT turn the page until you are told to do so.

Team Number: _____ **School:** _____

Problem 11 (1 point, 1 minute)

In a class of 50 students, 18 take Chorus, 26 take Band, and 2 take both Chorus and Band.

How many students in the class are not enrolled in either Chorus or Band?



ANSWER: _____

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Problem # 12

Do NOT turn the page until you are told to do so.

Team Number: _____ **School:** _____

Problem 12 (2 points, 2 minutes)

If $\frac{3}{5} = \frac{M}{45} = \frac{60}{N}$

what is $M + N$?

ANSWER: _____

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Problem # 13

Do NOT turn the page until you are told to do so.

Team Number: _____ **School:** _____

Problem 13 (2 points, 2 minutes)

At a skating party on an outdoor rink, you notice that there are 30 legs. Some of them belong to people and of them some belong to dogs. The difference between the number of people and dogs is three.

How many of each are on the rink if there are more people than dogs?



ANSWERS:

People: _____

Dogs: _____

TEAM #: _____ **School Name** _____

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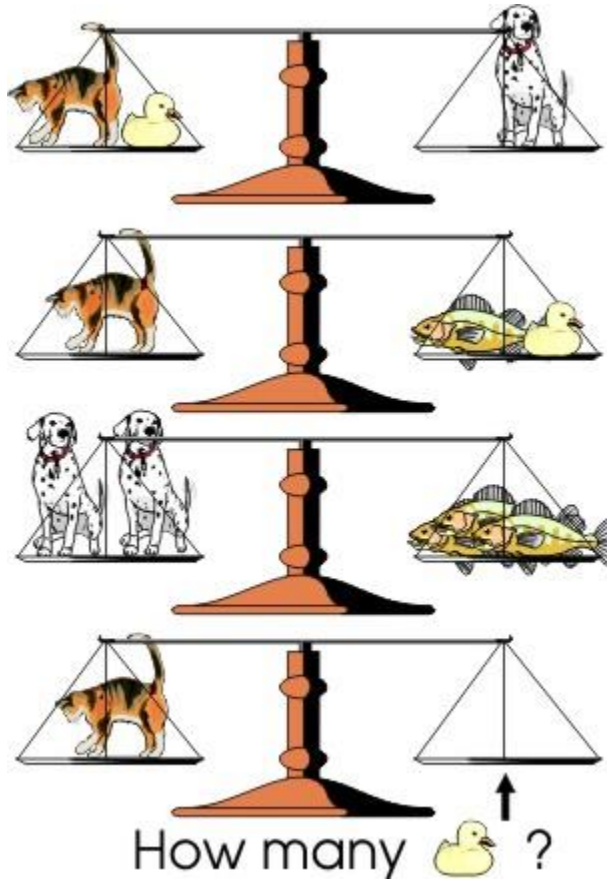
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Problem # 14

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Team Number: _____ **School:** _____

Problem 14 (2 points, 2 minutes)



ANSWER: _____ ducks

TEAM #: _____ **School Name** _____

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Problem # 15

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Problem 15 (2 points, 2 minutes)

In a six story apartment, Steve lives three floors above Tim, and two floors above Bob. Daniel lives just above Steve. Time lives above Richard, but below Bob.



On which floor does Ed live?

ANSWER: _____

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Problem # 16

Do NOT turn the page until you are told to do so.

Team Number: _____ **School:** _____

Problem 16 (3 points, 3 minutes)

Find the sum of $3 + 7 + 11 + 15 + \dots + 403$.

ANSWER: _____

TEAM #: _____ **School Name** _____

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Problem # 17

Do NOT turn the page until you are told to do so.

Team Number: _____ School: _____

Problem 17 (3 points, 3 minutes)

Use the digits 1, 2, 4, 5 and 7 in the following boxes so that the greatest product is obtained.

$$\begin{array}{r} \square \square \square \\ \times \square \square \\ \hline \end{array}$$

ANSWER: _____ x _____ = _____

TEAM #: _____ **School Name** _____

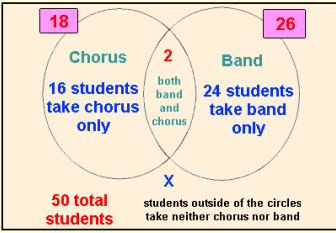
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Answer Key

#	PT	Solutions
1	1	110
2	1	\$68.75
3	1	\$74.77
4	2	24
5	2	4
6	2	18
7	3	25 ounces
8	2	50
9	2	24 cm

10	3	540
11	1	<p>8 students</p>  <p> $16 + 2 + 24 + x = 50$ $42 + x = 50$ $x = 8$ students </p> <p>http://www.regentsprep.org/regents/math/algebra/AP2/PracVenn.htm</p>
12	2	127
13	2	7 people, 4 dogs
14	2	5 ducks
15	2	Ed lives on the 4 th floor. 1: Richard, 2: Tim, 3: Bob, 4: Ed, 5: Steve, 6: Daniel
16	3	20,503
17	3	$541 \times 72 = 38,952$
	34	TOTAL POSSIBLE POINTS