

Kansas City Area Teachers of Mathematics
2012 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 **may** use calculators on this test (*not* cell phone calculators).
- Blank scratch paper can be used. Do **NOT** write on the team number card.
- You may **not** use rulers, protractors or other measurement devices on this test.

Problems # 1-3

This is a relay problem.

Team Number: _____ School: _____

Problems 1-3 (3 minutes, 3 points)

1. Ann is seven years old. Jose is four years older than Ann. Mike is five years younger than Jose and Paulo is ten years older than Mike. How old is Paulo?

Answer: _____

2. Michael Jordan was the lead scorer in the NBA for the 1995-6 season. He scored 2,491 points. Hakeem Olajuwon came in second with 121 times _____ . How many more points did Michael

(answer from #1)

Jordan score than Hakeem Olajuwon?

Answer: _____ **points**

3. Jaime traveled _____ miles to Grandma's house. Jaime's

(answer from #2)

car gets 25 miles per gallon. If the cost of each gallon is \$3.15, what is the cost to gas to go both to and from Grandma's house? *(Do not round your answers.)*

Answer: \$ _____

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Problem # 4

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

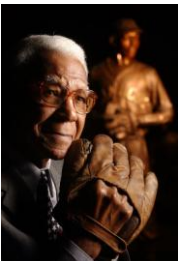
Team Number: _____ **School:** _____

Problem 4 *(2 points, 2 minutes)*

Trenton gave half of his baseball cards to Jasmin. Then he gave one-quarter of the remaining baseball cards to Davis. Afterwards, he gave three cards to Michael leaving him with only three cards. How many baseball cards did he have originally?



Babe Ruth
NY Yankees



Buck O'Neill
KC Monarchs

Answer: _____ **total cards**

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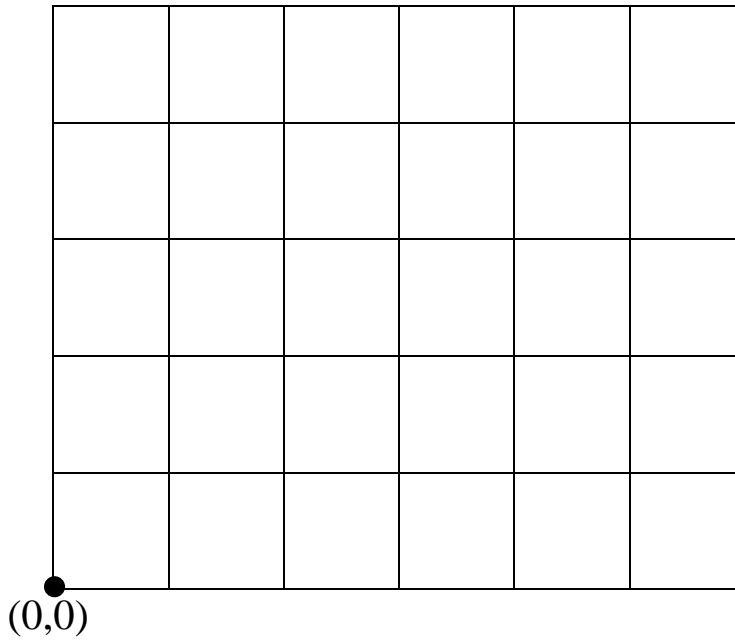
Problem # 5

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

Team Number: _____ **School:** _____

Problem 5 (3 points, 3 minutes)

1. Plot the points (2,3) and (4,3)
2. Connect the points (2,2), (3,1), (4,2), and (2,2)
3. Connect the points in the following order:
(2,0), (4,0), (5,1), (5,4), (4,5), (2,5), (1,4), (1,1) and (2,0)



Answer the following two questions:

- a. What do you see in the picture?
- b. What geometric shape is the outside figure?

Answer: a. _____
b. _____

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Problem # 6

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Team Number: _____ **School:** _____

Problem 6 (3 minutes, 3 points)

During one of Mnk's birthday parties, four friends dropped in to celebrate. All of these friends shared the same birthday as Munk although they were born in different years. The sum of the friends ages (at the time) was 24 years.



Donny the Donkey was one-third Ry the Rhino's age.
Rocky Racoon was three times Lyle the Lion's age.
Ry was twice Rocky's age.
Two year later, Rocky was twice Lyle's age.
Four years later, Donny was half Ry's age.

What was the age difference between the youngest and the oldest of these four friends?

Donny is ____ yrs. old
Rocky is ____ yrs. old
Ry is ____ yrs. old
Lyle is ____ yrs. old



Answer: _____ is the difference between the ages of the oldest and the youngest friend.

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Problem # 7

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Team Number: _____ **School:** _____

Problem 7 (2 minutes, 2 points)

Use all the digits from 0-9 to complete the number sentences.

$16 \div A = 8$	$B + C = 10$
$25 \times D = 25$	$E \times F = 21$
$G - H = 4$	$6 - I = 6$
$6 \times J = 48$	$F - E = 4$
$B - C = 2$	

Answers:

A = ___

B = ___

C = ___

D = ___

E = ___

F = ___

G = ___

H = ___

I = ___

J = ___

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Problem # 8

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

Team Number: _____ **School:** _____

Problem 8 (3 points, 3 minutes)



Weight: 39 oz.



Weight: 25 oz.



Weight: 43 oz.



Lion



Bunny



Bear

- Find the weight of one lion.
- Find the weight of one bunny.
- Find the weight of one teddy bear.

Answer: One lion weighs _____ ounces.

One bunny weighs _____ ounces.

One teddy bear weighs _____ ounces.

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Problem # 9

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

Team Number: _____ **School:** _____

Problem 9 (3 points, 3 minutes)

Five hikers are climbing up a mountain.
What is the order of the hikers?



- Dana and Jane are behind Rachael.
- Kris is ahead of Georgia.
- There are two hikers between Rachael and Jane.
- Georgia is ahead of Jane, but slower than Pam.
- Pam is behind Kris.
- Jane is ahead of Dana.

Answer: _____, _____, _____, _____, _____
 1st 2nd 3rd 4th 5th

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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)

Guide Alana took a group of ten tourists out on a safari trip to take pictures of animals. The group left base camp early in the morning.



They traveled 45 minutes before stopping to take pictures of some giraffes. The stop lasted 39 minutes. Then they traveled an hour and 10 minutes to a riverbank where they took a rest stop for 32 minutes. Back in the jeeps, they drove 37 minutes until they came upon a herd of elephants. They stopped and watched the elephants for an hour and 15 minutes.



The trip resumed with 15 minutes of travel before lunch. They stopped in a shady spot for an hour-long lunch break. After lunch, the group drove 72 more minutes and stopped to watch animals for 125 minutes before arriving back at the base camp at 5:25pm.



What time did they leave camp in the morning?

What time did they stop for lunch?

Answer: They left camp at _____ am.

They stopped for lunch at _____ am or pm (circle ans.)

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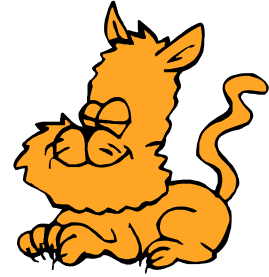
Problem # 11

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

Team Number: _____ **School:** _____

Problem 11 (2 points, 2 minutes)

Surface gravity is not the same on all planets in space. The chart shows the surface gravity (in relation to Earth) for eight planets in our solar system. This means that beings have different weights on different planets.



Assume that an 18 pound Boomerang lands on a distant planet and encounters a 4 ounce blowfish there. Assume also that on this planet Boomerang weighs 6.84 pounds and the blowfish weighs 0.095 pounds.



Which planet have they landed?

Surface Gravity	
Mercury	0.38
Venus	0.9
Earth	1
Mars	0.38
Jupiter	2.7
Saturn	1.2
Uranus	0.93
Neptune	1.5

Answer: Planet _____

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Problem # 12

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Problem 12 (3 points, 3 minutes)

Molly spent twice as many hours as Peyton in a hot air balloon. She spent 46 hours fewer than Kurt. The total for all three balloonists was 246 hours. How long did Kurt spend in the balloon?



Answer: _____ hours

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Problem # 13

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Problem 13 (3 points, 3 minutes)

Three standard number cubes with faces numbered 1 through 6 are stacked as shown. Seven of the eighteen faces are visible, leaving eleven faces hidden on the back, on the bottom, and between faces. The total number of dots NOT visible in this view is ___?

- A. 21
- B. 22
- C. 31
- D. 41
- E. 53



Answer: Total NOT showing is: _____

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Problem # 14

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Team Number: _____ **School:** _____

Problem 14 (3 points, 3 minutes)

Three Bucket Problem

There are 3 buckets, one red, one blue, and one yellow.



They each hold a maximum of 5 liters. Liquid is measured carefully in whole liters and poured into the buckets, a different number of liters is in each one.

If the liquid in the red bucket was poured into the blue bucket it would then contain the same amount of liquid as the yellow bucket. Half the contents of the yellow bucket is the same as twice that in the red bucket. How much liquid is there in each bucket?

Answer: Red bucket: _____ liters

Blue bucket: _____ liters

Yellow bucket: _____ liters

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Problem # 15

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Problem 15 (3 points, 3 minutes)



Penelope arrived at the Arctic Ocean Hospital to see her newborn. The baby penguins all had numbers on them, and they all looked identical. Help Penelope find the correct baby by using these clues:

The number on the Penelope's baby is not a prime number.

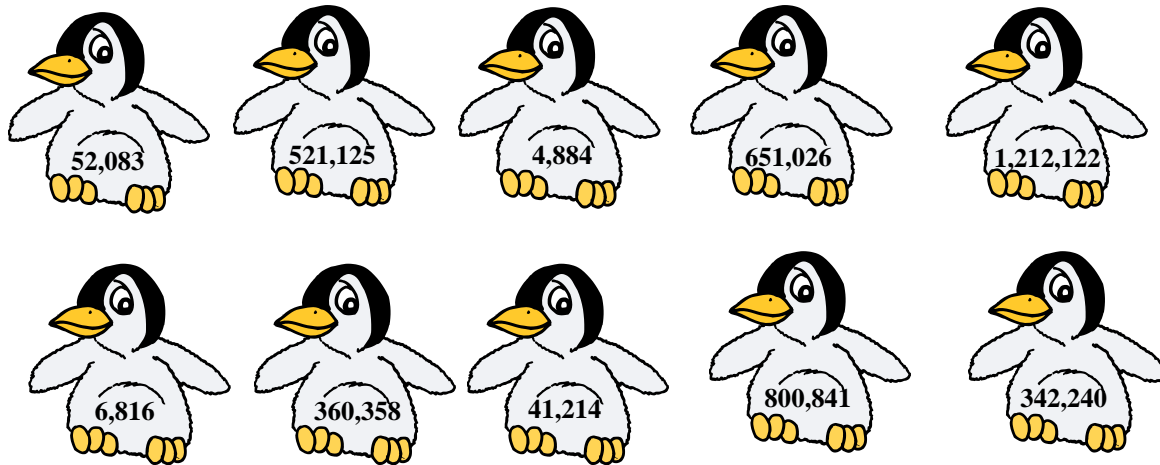
The number has three even digits other than zero.

The product of the digits is < 550 .

The number is not a palindrome.

The number is not divisible by 12.

The number has one digit or consecutive digits where one is the double of another digit.



Answer: Baby's number is _____

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Problem # 16

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Problem 16 (1 point, 1 minute)

After a game, the players and the head coach shake hands with every other person on the teams (their own team and the opposing team). How many handshakes would that be if you had 5 team members and 1 head coach for each team?



Answer: _____ handshakes

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Answer Key

1. 16
2. 555
3. \$139.86
4. cards
5. Smiley face; octagon (*must have both answers*)
6. 10 years difference
7. A = 2, B=6, C=4, D=1, E=3, F=7, G=9, H=5, I=0, J=8
8. Each lion is p, each bunny is 3, each teddy bear is 7.
9. 1st: Kris, 2nd: , 3rd: , 4th: , 5th:
10. Left camp: 7:55am; stopped for lunch: 1:08pm
11. Mercury or Mars
12. Kurt: 126 hours (Possible work: $x + 2x + 2x + 46 = 246$)
- 13.
14. Red: , Blue: , Yellow:
15. 800,841
16. Handshakes: