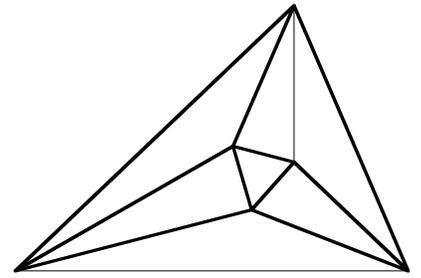


Meet 1 – Event A 2014-2015

Questions are worth 2-2-2-4-4 points respectively.

NO CALCULATORS ALLOWED



_____ 1. What is the greatest common factor of 72 and 116?

_____ 2. Sylvia received a bouquet of tulips after her cello recital. The table shows how many tulips of each color were in the bouquet.

Sylvia's Tulip Bouquet	
pink	3
purple	6
red	5
yellow	10

What fraction of the tulips in Sylvia's bouquet are purple? Express your answer in lowest terms.

_____ 3. Write the prime factorization of 8^3 .

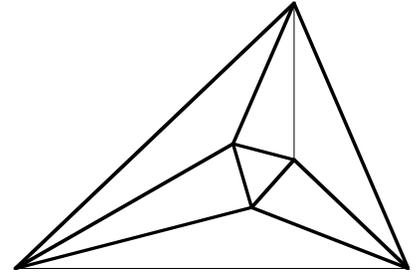
_____ 4. Evaluate:
 $3^2 + 6[87 - 2^2(12 + 9 - 1)] - 1$

_____ chairs 5. A classroom has d desks. There are half as many tables in the classroom as there are desks. Each desk has 1 chair. Each table has 4 chairs. How many chairs are in the classroom, in terms of d ?

Meet 1 – Event A 2014-2015

ANSWERS

Questions are worth 2-2-2-4-4 points respectively.



4 1.

$\frac{1}{4}$ 2. $\frac{6 \text{ purple}}{24 \text{ total}} = \frac{1}{4}$

2^9 3. $8^3 = (2^3)^3 = 2^9$
or) $2 \cdot 2 \cdot 2$

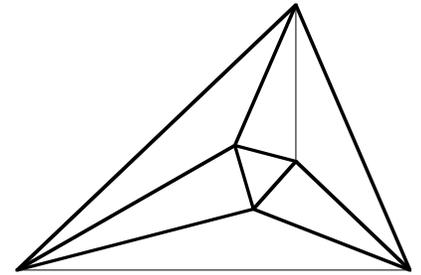
50 4. $3^2 + 6[87 - 2^2(12 + 9 - 1)] - 1$
 $9 + 6[87 - 4(20)] - 1$
 $9 + 6[87 - 80] - 1$
 $9 + 6(7) - 1$
 $9 + 42 - 1 = \mathbf{50}$

$3d$ chairs 5. tables: $d/2$
chairs: $1d + 4(d/2) = d + 2d = \mathbf{3d}$

Meet 1 – Event B 2014-2015

Questions are worth 2-2-2-4-4 points respectively.

NO CALCULATORS ALLOWED



_____ 1. Translate the verbal statement into an algebraic expression.
eight less than three times the sum of n and 12

_____ 2. There are 45 apple trees and 18 cherry trees in an orchard. Write the ratio of apple trees to cherry trees in lowest terms.

_____ 3. Evaluate: $\frac{8!}{3!}$

Use the following information to answer question 4 – 5.

Darius is making s'mores. He has a box of 36 graham crackers, a bag of 60 jumbo marshmallows, and a package of 6 chocolate bars.

_____ 4A. Darius can make regular s'mores or super s'mores.

- A regular s'more gets 2 halves of a graham cracker, 1 jumbo marshmallow, and one fourth of a chocolate bar.
- A super s'more gets half as much chocolate as a regular s'more, but twice as much marshmallow as a regular s'more.

_____ 4B.

Darius will only make one type of s'more.

- A) Given his supply of ingredients, can Darius make more regular s'mores or more super s'mores? Write "regular" or "super".
- B) How many more of the type you identified in **part A** can Darius make?

_____ colossal s'mores 5A.

_____ graham crackers 5B.

_____ marshmallows _____

_____ $\frac{1}{4}$ -chocolate-bar pieces

Darius decides to make colossal s'mores instead. He will make the colossal s'mores by evenly distributing all the ingredients so that each s'more is identical and no ingredients are left over. For the colossal s'mores, Darius will use $\frac{1}{4}$ -chocolate-bar-pieces.

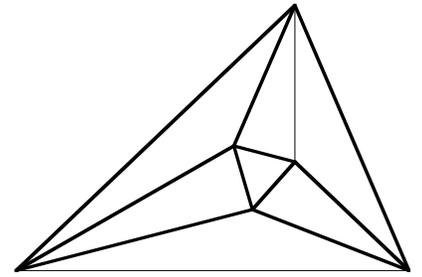
- A) Given his supply of ingredients, how many colossal s'mores can Darius make?
- B) How many graham crackers, jumbo marshmallows, and $\frac{1}{4}$ -chocolate-bar pieces does each colossal s'more have?

Name _____ School _____

Meet 1 – Event B 2014-2015

ANSWERS

Questions are worth 2-2-2-4-4 points respectively.



 $3(n + 12) - 8$ 1.

 5:2 2.

or) 5 to 2

or) 5/2

 6,720 3. $\frac{8!}{3!} = \frac{8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1}{3 \times 2 \times 1} = 8 \times 7 \times 6 \times 5 \times 4 = \mathbf{6,720}$

 super 4A.

Regular s'mores: The ingredient with the least number of servings is chocolate bars.

(6 bars of ¼-sized pieces = 24 regular s'more chocolate servings)

 6 4B.

There are 36 graham cracker servings and 60 marshmallow servings, thus the number of regular s'mores Darius can make is limited to 24.

***2 points each**

Super s'mores: The ingredient with the least number of servings is marshmallows.

(60 marshmallows ÷ 2 marshmallows per super s'more = 30 super s'more marshmallow servings)

There are 36 graham cracker servings and 48 chocolate servings, thus the number of super s'mores Darius can make is limited to 30.

 colossal s'mores 5A.

GCF of 36, 60, and 24 = 12; thus Darius can make **12** colossal s'mores.

 3 graham crackers 5B.

36/12 = **3** graham crackers per colossal s'more

 5 marshmallows

60/12 = **5** marshmallows per colossal s'more

 2 ¼-chocolate-bar pieces

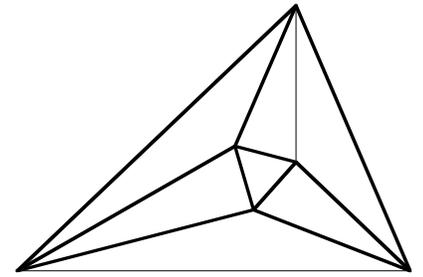
24/12 = **2** ¼-chocolate-bar pieces per colossal s'more

***1 point each**

Meet 1 – Team Event 2014-2015

Questions are worth 4 points each.

NO CALCULATORS ALLOWED



_____ 1. List the values in order from least to greatest.
 $\frac{4}{5}$, 0.6, $\frac{2}{3}$, 45%

_____ 2. Nora was born in 1997. The following facts about Nora's birthdate are also true:

- When Nora writes her birthdate in *mm/dd/yy** format, all of the numbers are prime.
*October 6, 1997 = 10/06/97
 (Note: This example date cannot be Nora's birthdate because 10 and 6 are not prime numbers!)
- The name of Nora's birth month is spelled with a prime number of letters.
- In *mm/dd/yy* format, Nora's birthdate has no repeated digits.

What could be Nora's birthdate?

Use the coordinate grid to answer questions 3 – 6.

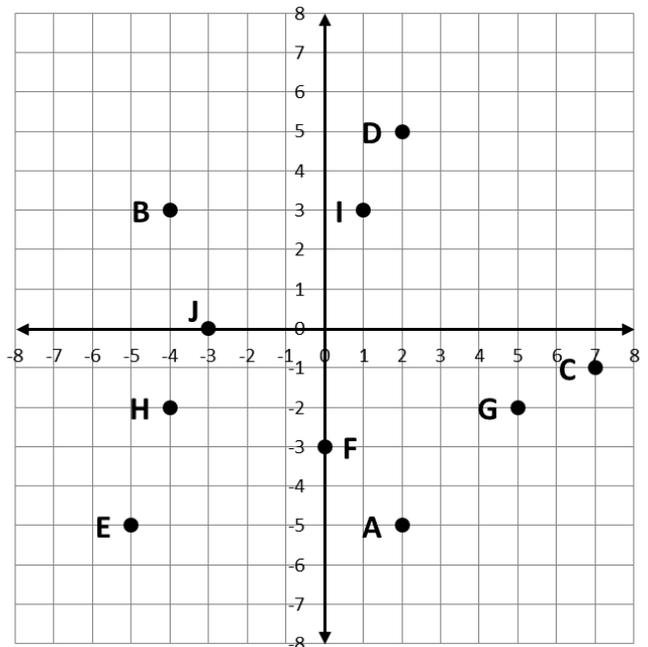
_____ 3. List **all** the points in quadrant III.
 You may name them by their letters.

_____ sq. units 4. What is the area of trapezoid EBIA?

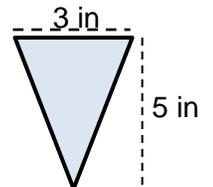
_____ 5. What is the median x-value of all the points on the graph?

_____ 6. What is the mean y-value of all the points on the graph?

_____ 7. Evaluate:
one-third times the difference of thirty-two and seventeen



_____ 8. Lang bakes a sheet cake. He slices the sheet cake into equal-sized isosceles triangular pieces as shown. Lang will store the slices in a 10 inch x 12 inch rectangular container.
 What is the maximum number of slices Lang can fit into one container without cutting or stacking any slices?



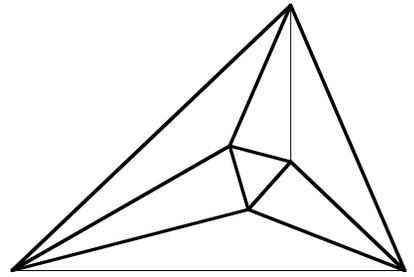
_____ 9. Refer to the information in **question 8**. Express the area of one Lang's cake slices to the area of the rectangular container as a ratio in lowest terms.

_____ m 10. Benjamin's robot travels at a pace of 45 meters per minute. How far does his robot travel in 20 seconds?

Meet 1 – Team Event 2014-2015

Questions are worth 4 points each.

ANSWERS



45%, 0.6, 2/3, 4/5 1.

3/2/97 2.
or) 05/2/97

In *mm/dd/yy* format, the number of the month (*mm*) is prime, and the name of the month is spelled with a prime number of letters; thus the only possibilities are months 3 (March) or 5 (May). The number of the day (*dd*) is prime; thus all the possibilities for prime days are 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, and 31. In *mm/dd/yy* format, there are no repeated digits; thus the possibilities are now limited to the following:

If month 3 – 2, 5

3, 13, 23, and 31 share a digit with the month
7, 17, 19, and 29 share a digit with the year
11 has repeated 1's

If month 5 – 2, 3, 13, 23, 31

5 shares a digit with the month
7, 17, 19, and 29 share a digit with the year
11 has repeated 1's

The sum of the month number and day number is also prime; thus the only possibilities are (3 + 2) and (5 + 2).

H, E 3.
*no partial credit

48 sq. units 4.

$$A: \frac{1}{2}h(b_1 + b_2) = \frac{1}{2}(8)(5 + 7) = 4(12) = 48$$

0.5 5.
or) 1/2

x-values: -5, -4, -4, -3, 0, 1, 2, 2, 5, 7

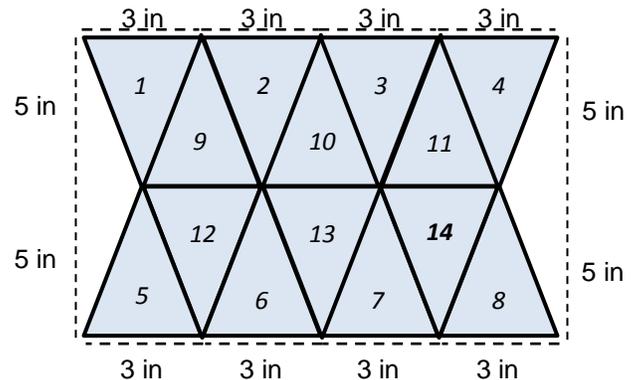
-0.7 6.
or) -7/10

y-values: -5, -5, -3, -2, -2, -1, 0, 3, 3, 5

5 7.

$$1/3(32 - 17) = 1/3(15) = 5$$

14 8.



1:16 9.

$$\text{Area of slice: } \frac{1}{2}bh = \frac{1}{2}(3)(5) = 7.5$$

or) 1 to 16, 1/16

$$\text{Area of container: } bh = (10)(12) = 120$$

$$7.5/120 = 75/1200 = 1/16$$

15 meters 10.

20 seconds = 1/3 minute

$$d = rt; d = 45(1/3) = 15$$