MATH MYSTERY



Mrs J's Resource Creations ©

Thank You for Downloading ©

Thank you for your purchase. I sincerely hope both you and your students enjoy this product. Your feedback would be appreciated so that I can make my resources better. Please do not hesitate to contact me if you need me to make any adjustments to this resource for you.

Follow my store to stay updated on more FREEBIES and new products @ Mrs J's Resource Creations

Terms of Use

- All pages of this packet are copyrighted. You may not create anything to sell or share based on this packet.
- This packet is for one teacher use only. Do not share with colleagues. If they like the packet please send them to my TPT store. TPT is about teachers supporting teachers ©
- You are permitted to share the cover image of this packet on your blog or via social media as long as you link back to my store on TPT showcasing the product or link to the product. My store link is http://www.teacherspayteachers.com/Store/Mrs-Js-Resource-Creations

Thank you so much for your download. I truly appreciate your business. ©

Mrs J's Resource Creations



PREPARATION

Print and copy pages 4-12 (for Clue 2, print page 7 for customary units or page 8 if you would prefer to use metric units) for your students. You can do either of the following:

- Combine the pages to form a booklet for each student to work on; OR
- Hand out worksheets as you want students to work on them please note that if you choose this option, students will always need the 'Possible Hideouts' page handy.
- Some spare paper will most likely be required (recommended) for clue 5 for students to work out their answers. (Could use the back of the page as well if blank)

IMPORTANT: The clues must be completed in the order I have arranged them in i.e. 1-5!

HOW TO USE

Read through the article on page 4 'Math Mystery: Case of the Graduation Gremlins' to set up the activity and engage students.

Instruct students that they will need to keep referring back to their Possible Hideouts list after solving each clue.

Students work through each clue, either guided by the teacher or independently (your choice). After completing a math worksheet, if students completed the questions correctly, a clue will be revealed. For example: 'It is a cold place.' So, in this example, students then need to go to their possible hideouts list and cross off any places remaining that are not cold.

Once students have correctly completed all of the clues, only one hideout will remain and that place is where the gremlins are hiding with all of the graduation items. On page 12, the teacher ticks off the 'Well done . . . ' box and the student can receive an Award (provided on page 20). If a student gets the wrong place, tick the second box "Oops! Try again," and instruct the student to go over their work to see where they went wrong.

ANSWERS

I have provided answer sheets for all of the clues, as well as where the graduation gremlins are hiding! You will find these on pages 13-19. This includes the elimination process of hideouts post each clue. A color coded guide with comments has been provided to show this.

AWARDS

On page 20 you will find awards that you can print and give to students who solve the case correctly. I suggest making it a rule that students complete all of the questions on each worksheet to be eligible for the award (even if they can guess what the clue is without finishing all of the math questions!). You could also make it a condition that students show their working out on the back of the page or on a separate piece of paper.

If you need help, have any questions, or notice an error in my work please email me on JJResourceCreations@gmail.com

Mrs J's Resource Creations ©

MATH MYSTERY:

CASE OF THE GRADUATION GREMLINS

Date:	

It is almost the end of the school year, but trouble has struck Mathhattan Elementary School! Teachers and students have reported that a gang of gremlins have been vandalizing the school and taking all sorts of important items required for graduation celebrations.

Mrs Frumpy complained, "The awards, certificates, memory books, games, prizes, hats and even my microphone have been taken! How are my students going to graduate now? They are so disappointed with these mischievous gremlins trying to ruin the end of year for everyone."

Sophia, a student, cried, "We were going to have a graduation party with food and games, but those terrible gremlins just stormed right into the classroom and took them all!"

Another student, named Anthony, put in the following statement, "I saw a group of gremlins sneak into the Principal's office and run out with her books, awards, trophies and computer! Someone must find where the gremlins are hiding with all of our things so that we can graduate and celebrate the end of year properly!"

MATH DETECTIVE NEEDED TO SEEK OUT THE GREMLIN GANG HIDEOUT AND RECOVER THE STOLEN GRADUATION ITEMS!!!

The police have made a list of all the possible places the gang of gremlins could be hiding out in. However, they need a super detective with math skills to help them solve this case.

Let's hope that we can find these gremlins trying to ruin graduation, recover all of the stolen items and put a stop to them ruining the end of the school year for everyone!



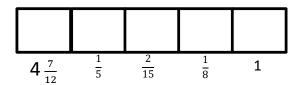
POSSIBLE HIDEOUTS

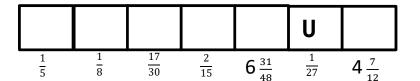
Hideout Place	Distance From Mathhattan Elementary School	Size	Temperature of Hideout	Positional Direction	Is it Underground? Yes/NO
Algebra Island	Far	Large	Warm	West	No
Crystal Cave	Close	Large	Cold	East	No
Sewer	Close	Large	Cold	North	Yes
Abandoned Theme Park	Far	Large	Warm	South	No
Pets Paradise Hotel	Close	Large	Warm	East	No
Crimson Chambers	Close	Medium	Cold	South	Yes
Chuck's Car Yard	Far	Medium	Warm	West	No
Pepe's Pizzeria Store Room	Close	Small	Cold	North	No
Behind the Donut Queen's Shop	Far	Small	Warm	South	No
The Historical Catacombs	Close	Large	Cold	South	Yes
Mrs Frumpy's Basement	Close	Small	Cold	North	Yes
The Graveyard	Far	Large	Cold	East	No
Mathhattan Subway Station	Close	Medium	Warm	South	Yes
The Local IT Company	Close	Medium	Cold	South	No
Slimewort's Abandoned Lair	Close	Small	Cold	West	Yes

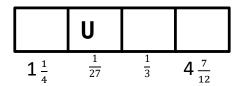
Solve the clues and then cross the hideout place off the list until one remains! The last place remaining is where the gremlins are hiding with all of the graduation items!

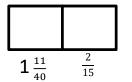
FRACTIONS — CLUE 1

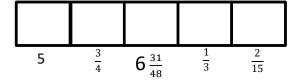
Crack the code by completing the fraction questions below. You must simplify (reduce) your answer as much as possible and write as a proper fraction (mixed number/whole) for it to match. Use your answers to match and place the letters in the boxes to reveal the clue. Put the letter in every box that it matches your answer in (there may be more than one!) The first one has been done for you!

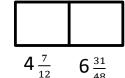












$$4\frac{7}{12}$$
 $\frac{1}{5}$ $\frac{2}{15}$

$$\frac{1}{3} \qquad 5 \qquad \frac{1}{5} \qquad 6\frac{31}{48} \qquad 6\frac{31}{48} \qquad \frac{3}{4}$$

$$\frac{1}{3} \times \frac{1}{9} = \frac{\frac{1}{27}}{U}$$

$$\frac{1}{2} \div \frac{2}{3} = \underline{\qquad \qquad \qquad }$$

$$\frac{5}{8} - \frac{4}{8} =$$

$$\frac{2}{4} + \frac{3}{4} =$$

$$\frac{2}{5} \div 2 = \underline{\qquad \qquad}$$

$$\frac{2}{9} \times \frac{3}{5} =$$

$$\frac{3}{4} \div 2\frac{1}{4} =$$

$$3\frac{5}{8} \times 1\frac{5}{6} =$$

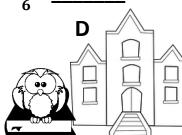
$$\frac{3}{8} + \frac{9}{10} =$$

$$\frac{11}{12} \div \frac{1}{5} = \underline{\qquad}$$

$$\frac{18}{20} - \frac{2}{6} =$$

 $1\frac{6}{9} \div \frac{1}{3} =$ _

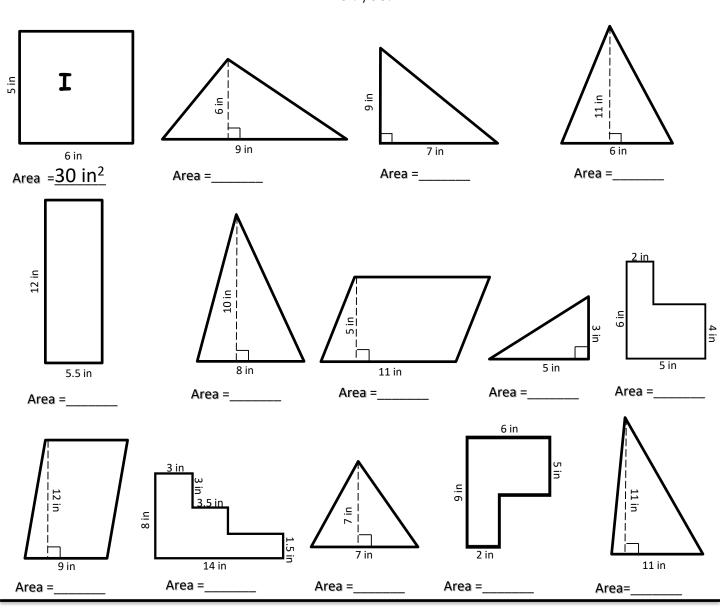


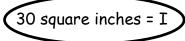


Imperial Units

AREA – CLUE 2

Reveal a clue about the Gremlins hideout place by working out the area of the figures below. Use your answers to find which letter to place inside each figure. The first one has been done for. you!





7.5 square inches = L

24.5 square inches = A

60.5 square inches = E

33 square inches = S

24 square inches = D

66 square inches = A

52.75 square inches = L

27 square inches = T

55 square inches = 0

31.5 square inches = I

38 square inches = C

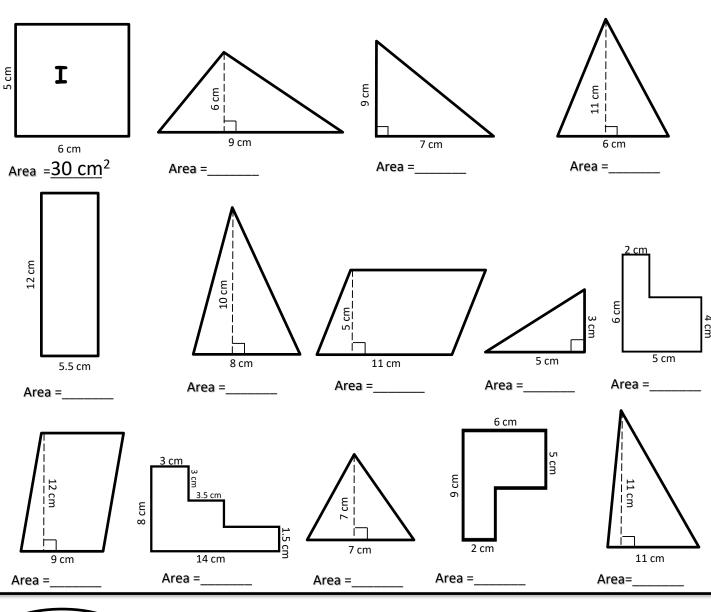
40 square inches = C

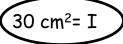
108 square inches = P

Metric Units

AREA – CLUE 2

Reveal a clue about the Gremlins hideout place by working out the area of the figures below. Use your answers to find which letter to place inside each figure. The first one has been done for. you!





 $7.5 \text{ cm}^2 = L$

 $24.5 \text{ cm}^2 = A$

 $33 \text{ cm}^2 = 5$

 $24 \text{ cm}^2 = D$

$$66 \text{ cm}^2 = A$$

 $52.75 \text{ cm}^2 = L$

 $27 \text{ cm}^2 = \text{T}$

$$55 \text{ cm}^2 = O$$

 $31.5 \text{ cm}^2 = I$

 $38 \text{ cm}^2 = C$

$$40 \text{ cm}^2 = C$$

 $108 \text{ cm}^2 = P$

APPLY RATIOS TO PROPORTIONS – CLUE 3

In the grid below you will find a number of public statements that the police collected, however unfortunately <u>only one of them is revealing a correct clue</u>. Fill in the blank spaces to make the ratios equivalent at the bottom of the page, and then look for your answer (the number that you wrote only) in the statement boxes and cross out that box (meaning that the statement in that box has been eliminated). The one statement box left standing after completing all of the questions, is the one with the correct clue!

Do you think that it is possible that the gremlins are hiding in the school?	My sister said that she saw a gang of gremlins running with all of the graduation items towards Chuck's Car Yard.	There has been some gossip around town that they are hiding in a medium sized place south of Mathhattan Elementary.	I'd say they are probably also who are responsible for our poor Internet connection lately, have you check in with the Local IT Company?
7	12	22	108
I think I saw a couple of gremlins hiding a stash of certificates in a place in the northern direction.	I saw this medium place that would be great for hiding all of the items they took.	They are probably lurking in one of those strange places in the south.	I'm pretty sure the gremlins have been meddling with my computer every night!
20	500	115	24
My guess is that the gremlins are probably hiding in a large place.	I heard that gremlins are scared of the dark, so they wouldn't be hiding underground.	My Aunt said that she spoke to a man who said that he saw a bunch of gremlins running with the graduation items west of Mathhattan.	I wouldn't be surprised if they were colluding with Mrs Frumpy and in fact hiding in her basement!
50	9	10	35
The gremlins must be hiding underground to not be easily noticed or found with all of the items.	The gremlins must be hiding in a small place, because they like confined spaces.	I'm pretty sure I saw a gremlin running into the local IT company.	Rumor has it that the gremlins are probably using Slimewort's abandoned lair.
150	34	54	72

10 : 50 = 100 :

28 : 49 = 20 :

42 : 36 = 84 :

33:77 = 3:

4 : 5 = 40 : _____

18:9 = 44:____

56 : 72 = 42 :

24:36 = 16:____

60:90 = 6:____

30 : 72 = 45 :

80 : 32 = 50 : _____

400 : 340 = 40 :

81 : 54 = 18 :

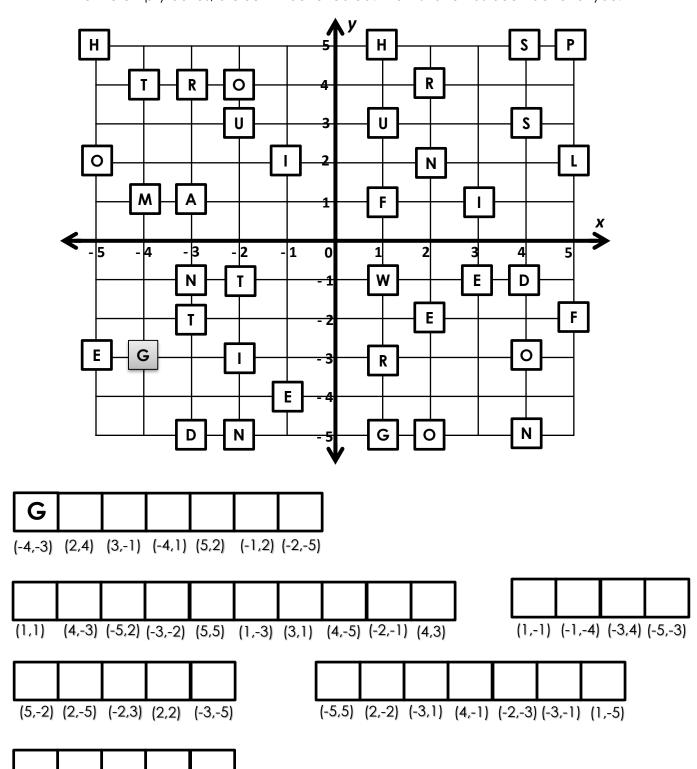
55 : 50 = 11 :

2: 5 = 46: _____

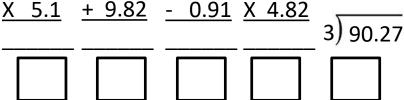
(4,5) (-2,4) (1,3) (-4,4) (1,5)

<u>Case of the Graduation Gremlins</u> COORDINATES — CLUE 4

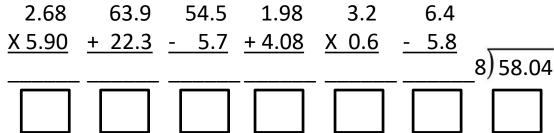
Locate which letter is at each coordinate listed, and then write that letter in the empty box provided above the coordinate given. Once you have found all of the letters and arranged them into the empty boxes, a clue will be revealed! The first one has been done for you.



Discover clue 5 by correctly completing the decimal problems below. Locate your answer at the bottom and see what letter it matches to write in the box. The first one has been done for YOU! (You may need a spare piece of paper to work out your answers.)







The answers are jumbled up below with a letter to help crack the code!

55.02 = T48.8 = 01.39 = A

56.394 = G

$$47.94 = L$$

 $35 = L$

$$5.93 = R$$

 $6.06 = R$

5) 86.2

$$8.44 = E$$

$$3.83 = E$$
 $5.64 = B$

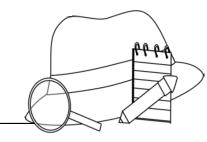
$$6.08 = E$$

SOLVE THE MYSTERY: WHERE ARE THE GRADUATION GREMLINS HIDING?



Clue 4

Detective



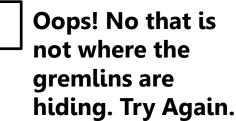
(your name)

Has discovered that the Graduation Gremlins' Hideout is:

Cides Checklist:	
Clue 1	
Clue 2	
Clue 3	

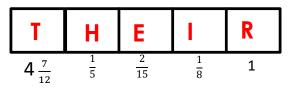
Teacher to check and tick

Well done you have found where the gremlins are hiding and recovered all of the graduation items!

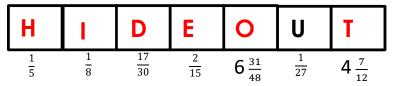


ANSWER SHEET – CLUE 1

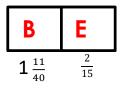
Crack the code by completing the fraction questions below. You must simplify (reduce) your answer as much as possible and write as a proper fraction (mixed number/whole) for it to match. Use your answers to match and place the letters in the boxes to reveal the clue. Put the letter in every box that it matches your answer in (there may be more than one!) The first one has been done for you!



Cross off all places that are far from the school.



 $\begin{array}{|c|c|c|c|c|c|c|} \hline M & U & S & T \\ \hline 1\frac{1}{4} & \frac{1}{27} & \frac{1}{3} & 4\frac{7}{12} \\ \hline \end{array}$



C L O S E
$$\frac{3}{4} \quad 6\frac{31}{48} \quad \frac{1}{3} \quad \frac{2}{15}$$

$$\begin{array}{c|cccc} T & O \\ \hline 4\frac{7}{12} & 6\frac{31}{48} \end{array}$$

S C H O O L
$$\frac{1}{3} 5 \frac{1}{5} 6\frac{31}{48} 6\frac{31}{48} \frac{3}{4}$$

$$\frac{1}{3} \times \frac{1}{9} = \frac{\frac{1}{27}}{U}$$

$$\frac{1}{2} \div \frac{2}{3} = \frac{\frac{3}{4}}{1}$$

$$\frac{8}{10} + \frac{2}{10} = \frac{1}{R}$$

$$\frac{5}{8} - \frac{4}{8} = \frac{\frac{1}{8}}{1}$$

$$\frac{2}{4} + \frac{3}{4} = \frac{1\frac{1}{4}}{4}$$

$$\frac{2}{5} \div 2 = \frac{\frac{1}{5}}{\mathsf{H}}$$

$$\frac{2}{9} \times \frac{3}{5} = \frac{\frac{2}{15}}{\mathbf{E}}$$

$$\frac{3}{4} \div 2\frac{1}{4} = \frac{\frac{1}{3}}{5}$$

$$3\frac{5}{8} \times 1\frac{5}{6} = \frac{6\frac{31}{48}}{O}$$

$$\frac{3}{8} + \frac{9}{10} = \frac{1\frac{11}{40}}{\mathbf{B}}$$

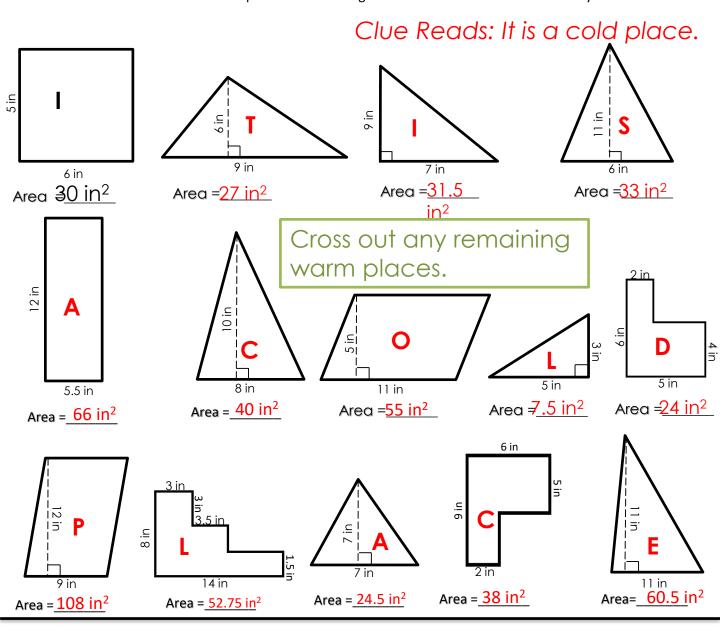
$$\frac{11}{12} \div \frac{1}{5} = \frac{4\frac{7}{12}}{\mathbf{T}}$$

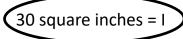
$$\frac{18}{20} - \frac{2}{6} = \frac{\frac{17}{30}}{D}$$

Imperial Units

ANSWER SHEET – CLUE 2

Reveal a clue about the Gremlins hideout place by working out the area of the figures below. Use your answers to find which letter to place inside each figure. The first one has been done for. you!





7.5 square inches = L

24.5 square inches = A

33 square inches = S

31.5 square inches = I

24 square inches = D

52.75 square inches = L

27 square inches = T

38 square inches = C

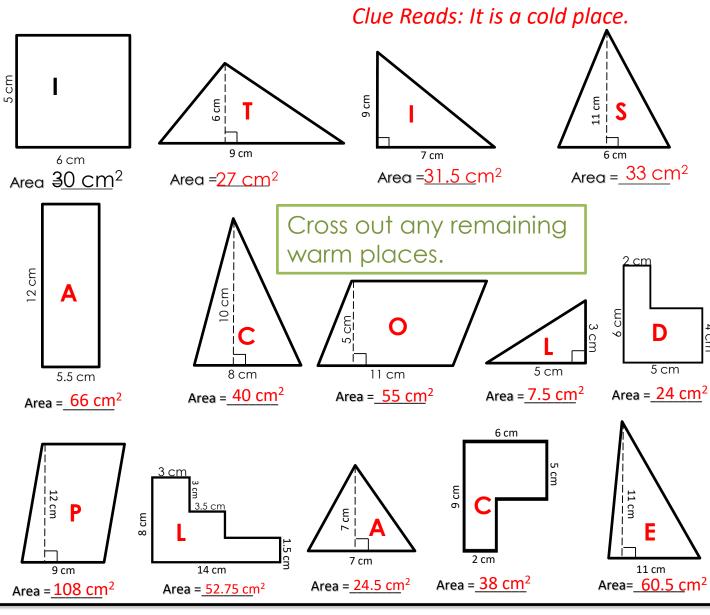
108 square inches = P

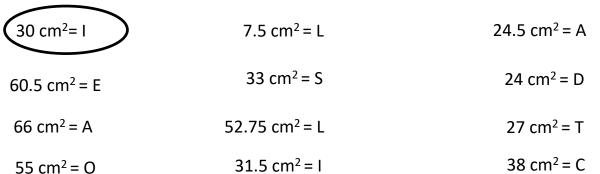
Metric Units

 $40 \text{ cm}^2 = C$

ANSWER SHEET – CLUE 2

Reveal a clue about the Gremlins hideout place by working out the area of the figures below. Use your answers to find which letter to place inside each figure. The first one has been done for. you!





 $108 \text{ cm}^2 = P$

ANSWER SHEET-CLUE 3

In the grid below you will find a number of public statements that the police collected, however unfortunately only one of them is revealing a correct clue. Fill in the blank spaces to make the ratios equivalent at the bottom of the page, and then look for your answer (the number that you wrote only) in the statement boxes and cross out that box (meaning that the statement in that box has been eliminated). The one statement box left standing after completing all of the questions, is the one with the correct clue!

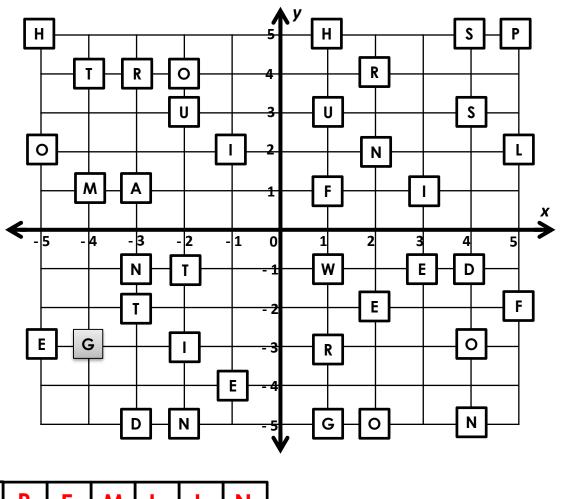
Do you think that it is possible that the gremt in the	My sister said that she saw a gang of gremlins running with all of the graductures toward toward toward.	There has been some gossip around town that they are hiding in a medic. Accesouth attan Elementary.	I'd say they are probably also who are responsible for our poor Internet connect, have you change in the Local It Company?
7	C 12	22	108
I think I saw a couple of gremlins hiding a stash secretains in a place orthern direction.	I saw place the ite to 500	They are probably lurking in one of hose wouth. 115	I'm pretty sure the gremlins have been med my comp cry night!
20	500	7 % 115	24
My guess is that the gremlins are probably hiding ge place	I heard that gremlins are scared of the dark, the wouldre iding underground.	said bunch runnii graduation	I wouldn't be surprised if they were colluding with Mrs Frun y and fact hiding in page 4 ment!
50	9	of Mathhatta 10	35
The gremlins must be hiding underground to not be easily noticed or found with all of the items.	The gremlins must be hiding in a small place, they like come paces.	I'm pretty sure I saw a gremlin running into the local pany.	Rumor has it that the gremlins are probably using t's aband
150	34	54	72

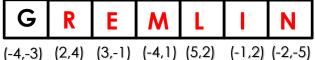
Name:

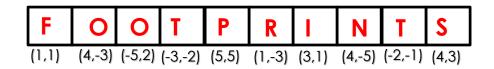
Case of the Graduation Gremlins

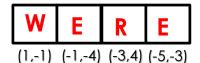
ANSWER SHEET-CLUE 4

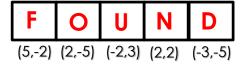
Locate which letter is at each coordinate listed, and then write that letter in the empty box provided above the coordinate given. Once you have found all of the letters and arranged them into the empty boxes, a clue will be revealed! The first one has been done for you.

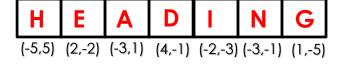


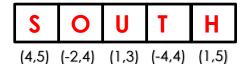












Keep any remaining places positioned in the south.

Cross off any remaining places not large. This should now leave the hideout only remaining.

X 4.23

$$\frac{X \ 6.2}{70.08} + 0.6 - 2.51$$



9.4 8.31 6.84 11.70

$$\times$$
 5.1 + 9.82 - 0.91 \times 4.82 \times 4.94 18.13 5.93 56.394 3 9

66.1



2.68

X 5.90

- 5.7

R

+ 4.08

X 0.6

5.8

63.9

+ 22.3

6.06

1.92





The answers are jumbled up below with a letter to help crack the code!

55.02 = 7

$$47.94 = L$$

$$5.93 = R$$

$$18.189 = C$$
 $15.812 = S$

$$6.06 = R$$

$$86.2 = T$$

 $7.6 = H$

$$30.09 = E$$

 $1.92 = A$

$$8.44 = E$$

 $66.1 = F$

3.83 = E

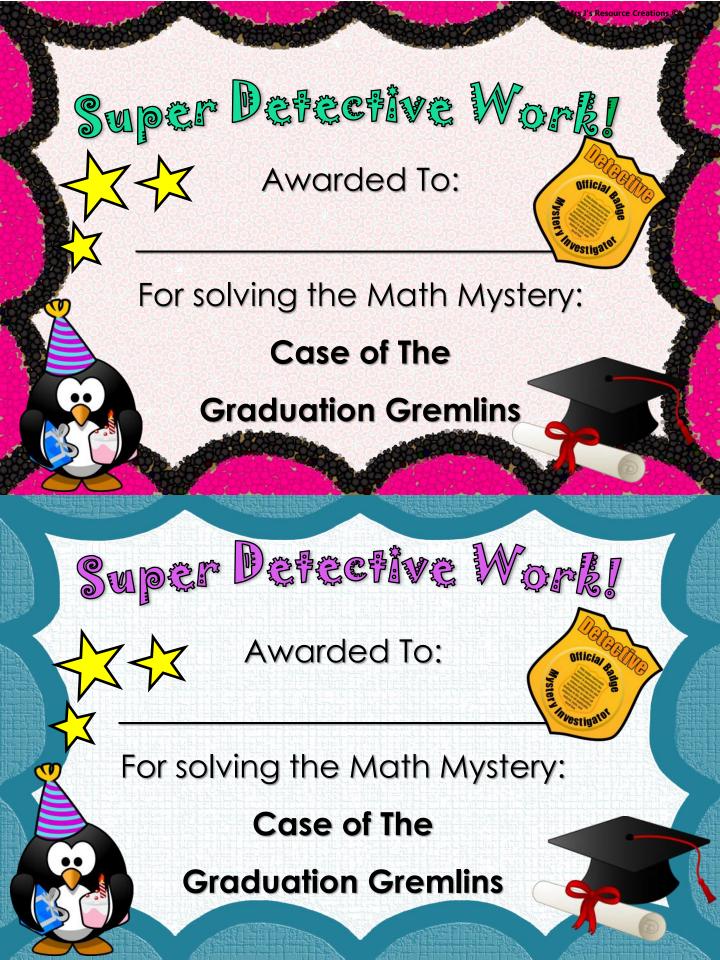
$$5.07 = M$$

32.9 = 0

HIDEOUT ELIMINATION

Hideout Place	Distance From Mathhattan Elementary School	Size	Temperature of Hideout	Positional Direction from the school	Underground Yes/NO
Algebra Island	Far	Large	Warm	West	No
Crystal Cave	Close	Large	Cold	East	No
Sewer	Close	Large	Cold	North	Yes
Abandoned Theme Park	Far	Large	Warm	South	No
Pets Paradise Hotel	Close	Large	Warm	East	No
Crimson Chambers	Close	Medium	Cold	South	Yes
Chuck's Car Yard	Far	Medium	Warm	West	No
Pepe's Pizzeria Store Room	Close	Small	Cold	North	No
Behind the Donut Queen's Shop	Far	Small	Warm	South	No
The Historical Catacombs	Close	Large	Cold	South	Yes
Mrs Frumpy's Basement	Close	Smail	Cold	North	Yes
The Graveyard	Far	Large	Cold	East	No
Mathhattan Subway Station	Close	Medium	Warm	South	Yes
The Local IT Company	Close	Medium	Cold	South	No
Slimewort's Abandoned Lair	Close	Small	Cold	West	Yes

On the answer sheets you will find a comment about which places need to be crossed off. Please refer to the color of the font and the color of the shaded places to show where has been crossed off from that clue.



CREDITS

THANK YOU FOR GRAPHICS & FONTS



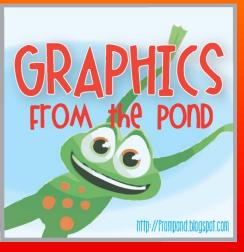


FOCA.TK

Teaching 4 Real

CLIPART LORD

Fonts by The Learning Tree









CLIPART LORD.COM

FOCA.TK



