



The Great Meridian Mystery

Grade 5 math · Addition, Subtraction, Multiplication, Fractions of a number, Division · Reading level grades 5-6

Detective: _____ **Date:** _____

Someone has scrambled the world's prime meridian marker inside the archives, throwing GPS coordinates across the globe into complete chaos! The Chief Cartographer needs your mathematical precision and map-reading skills to solve the clues and track down the culprit before we are lost forever.

1. Solve each math problem. The answer is a number, and the letter beside it is what that number stands for.
2. In the clue boxes, write that letter in every box showing the same number, then read the secret clue.
3. Use each clue to cross suspects off the list. The one suspect left at the end is the culprit!

My answer: the Coordinate Crook is _____

Possible suspects

Cross off a row as each clue rules it out. The one left at the end is the culprit.

NAME	NAVIGATION GEAR	MATH SPECIALTY	MARKING STYLE	WIG COLOR	NAVIGATION ERROR
Alexander Humboldt	brass compass	decimal masters	using blue ink	silver gray hair	rounding error
Carl Friedrich Gauss	laser rangefinder	fraction solvers	using blue ink	silver gray hair	scale mismatch
Amerigo Vespucci	brass compass	decimal masters	using red ink	ink black hair	magnetic drift
Sacagawea	laser rangefinder	topology wizards	using red ink	ink black hair	magnetic drift
Mary Somerville	laser rangefinder	algebra champions	using blue ink	silver gray hair	rounding error
Alan Turing	brass compass	fraction solvers	using blue ink	sandy brown hair	rounding error
Al Khwarizmi	topographic scanner	geometry experts	using blue ink	silver gray hair	rounding error
Grace Hopper	pocket sextant	algebra champions	using red ink	sandy brown hair	magnetic drift
Hypatia	topographic scanner	decimal masters	using blue ink	ink black hair	scale mismatch
Pythagoras	pocket sextant	topology wizards	using blue ink	sandy brown hair	rounding error
Gerardus Mercator	satellite receiver	algebra champions	using red ink	silver gray hair	rounding error
Eratosthenes	brass compass	algebra champions	using red ink	sandy brown hair	magnetic drift
Marco Polo	laser rangefinder	algebra champions	using blue ink	silver gray hair	magnetic drift
Katherine Johnson	laser rangefinder	fraction solvers	using red ink	silver gray hair	scale mismatch
Blaise Pascal	brass compass	geometry experts	using blue ink	silver gray hair	rounding error
Isaac Newton	laser rangefinder	decimal masters	using blue ink	ink black hair	scale mismatch
Jeanne Baret	pocket sextant	fraction solvers	using red ink	ink black hair	rounding error
Ada Lovelace	topographic scanner	decimal masters	using red ink	sandy brown hair	magnetic drift
Euclid	satellite receiver	fraction solvers	using red ink	sandy brown hair	scale mismatch
Ibn Battuta	satellite receiver	topology wizards	using blue ink	silver gray hair	scale mismatch
James Cook	topographic scanner	algebra champions	using blue ink	silver gray hair	rounding error

CLUE 1 Addition

To trace the escape route across the continents, we must add up the total distance between the scrambled coordinates. Let us tally these values first.

Solve each problem, then write its letter in every clue box that shows the same number.

T												T					
3452	7207	6579	5135	9254	6818	6818	8424	6028	5284	9547	6818	3452	6818	9547	6579	6818	4072
T												T					
3452	7207	6579	8586	6579	5135	6028	3696	3499	4424	3696	3499	5284	3452	6579	9254	5284	

$1328 + 2124 = \square \rightarrow$ T	$2714 + 4493 = \square \rightarrow$ H	$6337 + 3210 = \square \rightarrow$ N
$2523 + 2761 = \square \rightarrow$ S	$3069 + 3510 = \square \rightarrow$ E	$5745 + 3509 = \square \rightarrow$ R
$1818 + 4210 = \square \rightarrow$ I	$2414 + 1658 = \square \rightarrow$ F	$3145 + 1990 = \square \rightarrow$ C
$2171 + 2253 = \square \rightarrow$ L	$2675 + 4143 = \square \rightarrow$ O	$5117 + 3469 = \square \rightarrow$ D
$1647 + 1852 = \square \rightarrow$ A	$1216 + 2480 = \square \rightarrow$ M	$4886 + 3538 = \square \rightarrow$ K

Scratch space:

CLUE 2
Subtraction

The suspect tampered with the altitude settings on our GPS tracking screen. Subtract the baseline elevation from the current peaks to isolate the real pathway.

Solve each problem, then write its letter in every clue box that shows the same number.

T																			
4461	3214	6779	8001	3162	1884	2730	6779	3133	8001	6779	1423	6779	2730	5621	4159	3214	5621	8348	

4038	4665	5565	6779	1884	1423	2140	2730	5621	3162	2140	3133	

$5356 - 895 = \square \rightarrow \boxed{\text{T}}$

$3297 - 1413 = \square \rightarrow \boxed{\text{I}}$

$8495 - 2930 = \square \rightarrow \boxed{\text{U}}$

$6228 - 3095 = \square \rightarrow \boxed{\text{S}}$

$5672 - 51 = \square \rightarrow \boxed{\text{A}}$

$11839 - 3838 = \square \rightarrow \boxed{\text{C}}$

$11302 - 2954 = \square \rightarrow \boxed{\text{D}}$

$4283 - 124 = \square \rightarrow \boxed{\text{P}}$

$3381 - 651 = \square \rightarrow \boxed{\text{M}}$

$11312 - 4533 = \square \rightarrow \boxed{\text{E}}$

$6510 - 2472 = \square \rightarrow \boxed{\text{B}}$

$5245 - 3822 = \square \rightarrow \boxed{\text{N}}$

$3861 - 1721 = \square \rightarrow \boxed{\text{K}}$

$6904 - 3742 = \square \rightarrow \boxed{\text{R}}$

$4995 - 1781 = \square \rightarrow \boxed{\text{H}}$

$6061 - 1396 = \square \rightarrow \boxed{\text{L}}$

Scratch space:

CLUE 3
Multiplication facts (1-12)

The search grid is divided into neat rows and columns. Multiply the scale divisions of our target grid map to find out how many square units we must investigate.

Solve each problem, then write its letter in every clue box that shows the same number.

T												T				
63	20	77	4	99	99	18	132	90	33	28	63	77	1			
1	5	14	14	77	18	77	132	28	18	99	5	33	132	90	33	49
77	18	18	99	18												

$7 \times 9 = \square \rightarrow \text{T}$

$4 \times 5 = \square \rightarrow \text{H}$

$11 \times 12 = \square \rightarrow \text{D}$

$2 \times 7 = \square \rightarrow \text{F}$

$1 \times 1 = \square \rightarrow \text{S}$

$10 \times 9 = \square \rightarrow \text{I}$

$11 \times 7 = \square \rightarrow \text{E}$

$4 \times 1 = \square \rightarrow \text{C}$

$9 \times 2 = \square \rightarrow \text{R}$

$9 \times 11 = \square \rightarrow \text{O}$

$7 \times 7 = \square \rightarrow \text{G}$

$7 \times 4 = \square \rightarrow \text{A}$

$5 \times 1 = \square \rightarrow \text{U}$

$11 \times 3 = \square \rightarrow \text{N}$

Scratch space:

CLUE 4
Fractions of a number

Only a fraction of the historical map files in the secure drawer were altered by the intruder. Let us calculate this fraction of the total archive set to unlock the next clue.

Solve each problem, then write its letter in every clue box that shows the same number.

T					T											
14	15	40	12	21	14	40	10	23	17	40	10	40	17	34	40	24
10	3	26	34	40	17	12	17	21	16	15	21	3	17			
	T															
10	14	17	21	19	24	10										

$3/6 \text{ of } 28 = \square \rightarrow \boxed{\text{T}}$

$2/10 \text{ of } 95 = \square \rightarrow \boxed{\text{N}}$

$3/6 \text{ of } 34 = \square \rightarrow \boxed{\text{R}}$

$4/8 \text{ of } 6 = \square \rightarrow \boxed{\text{I}}$

$1/2 \text{ of } 42 = \square \rightarrow \boxed{\text{A}}$

$2/4 \text{ of } 80 = \square \rightarrow \boxed{\text{E}}$

$2/8 \text{ of } 60 = \square \rightarrow \boxed{\text{H}}$

$3/6 \text{ of } 52 = \square \rightarrow \boxed{\text{L}}$

$1/5 \text{ of } 80 = \square \rightarrow \boxed{\text{Y}}$

$2/8 \text{ of } 92 = \square \rightarrow \boxed{\text{P}}$

$3/6 \text{ of } 24 = \square \rightarrow \boxed{\text{G}}$

$4/10 \text{ of } 85 = \square \rightarrow \boxed{\text{V}}$

$3/4 \text{ of } 32 = \square \rightarrow \boxed{\text{D}}$

$1/5 \text{ of } 50 = \square \rightarrow \boxed{\text{S}}$

Scratch space:

CLUE 5**Division facts (1-12) - the last clue**

We need to divide our search party evenly into regional tracking teams. Divide the total coordinate boundaries by the number of active teams to get our final search area.

First solve each problem. Then find each answer in the numbered list below and cross that sentence out. One sentence will be left - that is exactly what the villain did!

Step 1 - solve these:

$77 \div 7 = \boxed{}$

$24 \div 6 = \boxed{}$

$42 \div 7 = \boxed{}$

$108 \div 12 = \boxed{}$

$50 \div 10 = \boxed{}$

$120 \div 10 = \boxed{}$

$20 \div 2 = \boxed{}$

$64 \div 8 = \boxed{}$

$42 \div 6 = \boxed{}$

$24 \div 12 = \boxed{}$

$33 \div 11 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain measured the distance with a laser rangefinder, then solved riddles like algebra champions.
2. The villain mapped the chamber with a topographic scanner, then navigated the rooms like topology wizards.
3. The villain measured the distance with a laser rangefinder, then bragged about being fraction solvers.
4. The villain mapped the chamber with a topographic scanner, then solved riddles like algebra champions.
5. The villain oriented the vault map with a brass compass, then bragged about being fraction solvers.
6. The villain oriented the vault map with a brass compass, then proved they were skilled geometry experts.
7. The villain calculated angles using a pocket sextant, then solved riddles like algebra champions.
8. The villain measured the distance with a laser rangefinder, then declared themselves decimal masters.
9. The villain tracked the satellite receiver signal, then solved riddles like algebra champions.
10. The villain tracked the satellite receiver signal, then proved they were skilled geometry experts.
11. The villain mapped the chamber with a topographic scanner, then proved they were skilled geometry experts.
12. The villain tracked the satellite receiver signal, then declared themselves decimal masters.

Answer Key

The Great Meridian Mystery

Culprit: Mary Somerville

laser rangefinder · algebra champions · using blue ink · silver gray hair · rounding error

Trail: Start 21 → Clue 1 16 → Clue 2 9 → Clue 3 6 → Clue 4 4 → Clue 5 1

Clue 1 (Addition): "THE CROOK IS NOT ONE OF THE DECIMAL MASTERS"

$1328 + 2124 = 3452$ (T) · $2714 + 4493 = 7207$ (H) · $6337 + 3210 = 9547$ (N) · $2523 + 2761 = 5284$ (S) · $3069 + 3510 = 6579$ (E) · $5745 + 3509 = 9254$ (R) · $1818 + 4210 = 6028$ (I) · $2414 + 1658 = 4072$ (F) · $3145 + 1990 = 5135$ (C) · $2171 + 2253 = 4424$ (L) · $2675 + 4143 = 6818$ (O) · $5117 + 3469 = 8586$ (D) · $1647 + 1852 = 3499$ (A) · $1216 + 2480 = 3696$ (M) · $4886 + 3538 = 8424$ (K)

Clue 2 (Subtraction): "THE CRIME SCENE MAP HAD BLUE INK MARKS"

$5356 - 895 = 4461$ (T) · $3297 - 1413 = 1884$ (I) · $8495 - 2930 = 5565$ (U) · $6228 - 3095 = 3133$ (S) · $5672 - 51 = 5621$ (A) · $11839 - 3838 = 8001$ (C) · $11302 - 2954 = 8348$ (D) · $4283 - 124 = 4159$ (P) · $3381 - 651 = 2730$ (M) · $11312 - 4533 = 6779$ (E) · $6510 - 2472 = 4038$ (B) · $5245 - 3822 = 1423$ (N) · $3861 - 1721 = 2140$ (K) · $6904 - 3742 = 3162$ (R) · $4995 - 1781 = 3214$ (H) · $6061 - 1396 = 4665$ (L)

Clue 3 (Multiplication facts (1-12)): "THE COORDINATES SUFFERED A ROUNDING ERROR"

$7 \times 9 = 63$ (T) · $4 \times 5 = 20$ (H) · $11 \times 12 = 132$ (D) · $2 \times 7 = 14$ (F) · $1 \times 1 = 1$ (S) · $10 \times 9 = 90$ (I) · $11 \times 7 = 77$ (E) · $4 \times 1 = 4$ (C) · $9 \times 2 = 18$ (R) · $9 \times 11 = 99$ (O) · $7 \times 7 = 49$ (G) · $7 \times 4 = 28$ (A) · $5 \times 1 = 5$ (U) · $11 \times 3 = 33$ (N)

Clue 4 (Fractions of a number): "THE GATES PRESERVED SILVER GRAY HAIR STRANDS"

$3/6$ of 28 = 14 (T) · $2/10$ of 95 = 19 (N) · $3/6$ of 34 = 17 (R) · $4/8$ of 6 = 3 (I) · $1/2$ of 42 = 21 (A) · $2/4$ of 80 = 40 (E) · $2/8$ of 60 = 15 (H) · $3/6$ of 52 = 26 (L) · $1/5$ of 80 = 16 (Y) · $2/8$ of 92 = 23 (P) · $3/6$ of 24 = 12 (G) · $4/10$ of 85 = 34 (V) · $3/4$ of 32 = 24 (D) · $1/5$ of 50 = 10 (S)

Clue 5 (Division facts (1-12)): surviving statement is box 1 → Mary Somerville

$77 \div 7 = 11$ · $24 \div 6 = 4$ · $42 \div 7 = 6$ · $108 \div 12 = 9$ · $50 \div 10 = 5$ · $120 \div 10 = 12$ · $20 \div 2 = 10$ · $64 \div 8 = 8$ · $42 \div 6 = 7$ · $24 \div 12 = 2$ · $33 \div 11 = 3$