



The Great Sillyshire Castle Heist

Grade 10 math · Pythagorean theorem, Bar models, Multi-step word problems, Word problems, Division · Reading level grades 7-9

Detective: _____ Date: _____

Someone stole the ancient royal crown from the vault during the annual kingdom banquet! The Grand Chamberlain called upon the realm's top detectives to examine evidence and identify the royal impostor.

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 Crown Thief is _____

Possible suspects

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

NAME	SIGNATURE MOVE	BONUS GADGET	DOMINANT HAND	ROYAL HAIRSTYLE	SECRET WEAKNESS
Roman the Great	Scepter Beam	Fancy Ring	Left Handed	Purple Wig	Garlic Bread
Count Ryan Roman	Royal Command	Diamond Wand	Right Handed	Golden Curls	Loud Bells
Kailynn Romn	Velvet Dash	Glitter Bomb	Left Handed	Purple Wig	Garlic Bread
Sir Donnie O Ryan	Velvet Dash	Laser Cape	Left Handed	Purple Wig	Squeaky Toys
Lady Kailynn Ryan	Scepter Beam	Laser Cape	Left Handed	Purple Wig	Loud Bells
Kailynn Supreme	Scepter Beam	Diamond Wand	Right Handed	Purple Wig	Garlic Bread
Sir Ryan the Wise	Crown Blast	Golden Shield	Right Handed	Silver Braids	Squeaky Toys
Lord Roman Ryan	Royal Command	Glitter Bomb	Right Handed	Golden Curls	Squeaky Toys
Roman McRyan	Velvet Dash	Diamond Wand	Left Handed	Silver Braids	Garlic Bread
Princess Kailynn	Throne Guard	Diamond Wand	Left Handed	Golden Curls	Garlic Bread
Donnie McDonald	Throne Guard	Fancy Ring	Left Handed	Purple Wig	Squeaky Toys
Donnie von Ryan	Royal Command	Fancy Ring	Left Handed	Purple Wig	Loud Bells
King Roman II	Scepter Beam	Glitter Bomb	Right Handed	Golden Curls	Squeaky Toys
Kailynn McDonnie	Velvet Dash	Glitter Bomb	Right Handed	Golden Curls	Squeaky Toys
Donnie Kingpin	Scepter Beam	Diamond Wand	Left Handed	Purple Wig	Garlic Bread
Donnie Romanov	Royal Command	Golden Shield	Left Handed	Purple Wig	Garlic Bread
Roman Kailynn Jr	Crown Blast	Golden Shield	Left Handed	Golden Curls	Garlic Bread
Ryan O Donnell	Velvet Dash	Golden Shield	Left Handed	Silver Braids	Garlic Bread
Roman Empire Ryan	Throne Guard	Diamond Wand	Left Handed	Golden Curls	Loud Bells
Duchess Kailynn II	Royal Command	Fancy Ring	Left Handed	Purple Wig	Garlic Bread
Prince Donnie	Crown Blast	Glitter Bomb	Left Handed	Silver Braids	Loud Bells

CLUE 1

Pythagorean theorem

The court scribe analyzed the logbooks left behind in the royal pantry. By breaking down the daily inventory tallies into algebraic word problems, the scribe isolated a single negative clue about the thief.

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

T																	T
50	20	17	40	74	82	82	52	74	116	65	125	17	29	116	125	50	
						T	T										
58	29	17	37	82	74	50	50	17	26	100	125	5	100				

legs 14 and 48, hypotenuse = → **T**

legs 8 and 15, hypotenuse = → **E**

legs 20 and 48, hypotenuse = → **A**

legs 24 and 32, hypotenuse = → **V**

legs 12 and 35, hypotenuse = → **G**

legs 12 and 16, hypotenuse = → **H**

legs 40 and 42, hypotenuse = → **U**

legs 80 and 84, hypotenuse = → **N**

legs 24 and 70, hypotenuse = → **I**

legs 20 and 21, hypotenuse = → **S**

legs 18 and 80, hypotenuse = → **L**

legs 3 and 4, hypotenuse = → **M**

legs 28 and 96, hypotenuse = → **B**

legs 25 and 60, hypotenuse = → **D**

legs 35 and 120, hypotenuse = → **O**

legs 10 and 24, hypotenuse = → **R**

Scratch space:

CLUE 2

Bar model word problems

To compare the measurements of witnesses near the balcony, the royal guard drew precise bar models on parchment. Visualizing the ratios helped narrow down the physical tells of the culprit.

Draw a bar model to solve each word problem, then write its letter in the boxes to fill in the missing word.

A witness saw the villain was L D D .

33 99 134 38 79 107 124 99

The Scribe shares 66 velvet cushions equally among 2 teams. How many velvet cushions does each team get?

draw a bar model

Answer: → L

One group collected 32 jeweled rings and another group collected 47 jeweled rings. How many jeweled rings in all?

draw a bar model

Answer: → H

The Scribe has 11 times as many silver spoons as a teammate. The teammate has 9 silver spoons. How many silver spoons does The Scribe have?

draw a bar model

Answer: → E

One group collected 28 jeweled rings and another group collected 96 jeweled rings. How many jeweled rings in all?

draw a bar model

Answer: → N

One group collected 52 velvet cushions and another group collected 55 velvet cushions. How many velvet cushions in all?

draw a bar model

Answer: → A

One group collected 19 silver spoons and another group collected 19 silver spoons. How many silver spoons in all?

draw a bar model

Answer: → T

The red team has 142 velvet cushions and the blue team has 8 velvet cushions. How many more velvet cushions does the red team have?

draw a bar model

Answer: → F

CLUE 4

Word problems

The detective measured the diagonal path across the banquet hall floor tiles where the suspect fled. Using the Pythagorean theorem on the right triangle formed by the hall's dimensions, the detective found the distance traveled and a crucial hair sample.

Solve each problem, then write its letter in the boxes to fill in the missing word.

A strand of P P G hair turned up at the scene.

117 94 46 117 71 68 79 11

The Scribe found 27 silver spoons yesterday and 90 more today. How many silver spoons in all?

Answer: → P

The Scribe found 44 velvet cushions yesterday and 2 more today. How many velvet cushions in all?

Answer: → R

The Scribe found 25 golden goblets yesterday and 69 more today. How many golden goblets in all?

Answer: → U

The Scribe found 13 velvet cushions yesterday and 58 more today. How many velvet cushions in all?

Answer: → L

There were 100 silver spoons. 21 were used up. How many silver spoons are left?

Answer: → W

The Scribe found 49 jeweled rings yesterday and 19 more today. How many jeweled rings in all?

Answer: → E

There were 37 golden goblets. 26 were used up. How many golden goblets are left?

Answer: → I

Scratch space:

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

Dividing the remaining royal coin pouches equally among five royal guards helped clear up the final mystery. The equal distribution pattern pointed directly to the true identity of the culprit.

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:

$110 \div 11 = \boxed{}$

$4 \div 1 = \boxed{}$

$63 \div 9 = \boxed{}$

$8 \div 4 = \boxed{}$

$30 \div 10 = \boxed{}$

$33 \div 3 = \boxed{}$

$24 \div 2 = \boxed{}$

$72 \div 9 = \boxed{}$

$12 \div 2 = \boxed{}$

$7 \div 7 = \boxed{}$

$36 \div 4 = \boxed{}$

Step 2 - cross out the sentence with each answer:

1. The villain zapped the vault with a scepter beam, then blinded the witnesses with a glitter bomb.
2. The villain dashed through the hall in velvet robes, then deflected the guards with a golden shield.
3. The villain blasted the doors with crown energy, then deflected the guards with a golden shield.
4. The villain issued a stern royal command, then deflected the guards with a golden shield.
5. The villain zapped the vault with a scepter beam, then cast a spell with a diamond wand.
6. The villain summoned a magical throne guard, then deflected the guards with a golden shield.
7. The villain zapped the vault with a scepter beam, then unlocked the chest with a fancy ring.
8. The villain zapped the vault with a scepter beam, then glided away using a laser cape.
9. The villain summoned a magical throne guard, then unlocked the chest with a fancy ring.
10. The villain issued a stern royal command, then unlocked the chest with a fancy ring.
11. The villain summoned a magical throne guard, then blinded the witnesses with a glitter bomb.
12. The villain dashed through the hall in velvet robes, then blinded the witnesses with a glitter bomb.

Answer Key

The Great Sillyshire Castle Heist

Culprit: Donnie Kingpin

Scepter Beam · Diamond Wand · Left Handed · Purple Wig · Garlic Bread

Trail: Start 21 → Clue 1 16 → Clue 2 13 → Clue 3 8 → Clue 4 4 → Clue 5 1

Clue 1 (Pythagorean theorem): "THE VILLAIN DOES NOT USE GLITTER BOMB"

legs 14 and 48, hypotenuse = 50 (T) · legs 8 and 15, hypotenuse = 17 (E) · legs 20 and 48, hypotenuse = 52 (A) · legs 24 and 32, hypotenuse = 40 (V) · legs 12 and 35, hypotenuse = 37 (G) · legs 12 and 16, hypotenuse = 20 (H) · legs 40 and 42, hypotenuse = 58 (U) · legs 80 and 84, hypotenuse = 116 (N) · legs 24 and 70, hypotenuse = 74 (I) · legs 20 and 21, hypotenuse = 29 (S) · legs 18 and 80, hypotenuse = 82 (L) · legs 3 and 4, hypotenuse = 5 (M) · legs 28 and 96, hypotenuse = 100 (B) · legs 25 and 60, hypotenuse = 65 (D) · legs 35 and 120, hypotenuse = 125 (O) · legs 10 and 24, hypotenuse = 26 (R)

Clue 2 (Bar model word problems): "LEFT HANDED"

The Scribe shares 66 velvet cushions equally among 2 teams. How many velvet cushions does each team get? = 33 (L) · One group collected 32 jeweled rings and another group collected 47 jeweled rings. How many jeweled rings in all? = 79 (H) · The Scribe has 11 times as many silver spoons as a teammate. The teammate has 9 silver spoons. How many silver spoons does The Scribe have? = 99 (E) · One group collected 28 jeweled rings and another group collected 96 jeweled rings. How many jeweled rings in all? = 124 (N) · One group collected 52 velvet cushions and another group collected 55 velvet cushions. How many velvet cushions in all? = 107 (A) · One group collected 19 silver spoons and another group collected 19 silver spoons. How many silver spoons in all? = 38 (T) · The red team has 142 velvet cushions and the blue team has 8 velvet cushions. How many more velvet cushions does the red team have? = 134 (F)

Clue 3 (Multi-step word problems): "GARLIC BREAD"

There were 167 velvet cushions in all. 2 The Royal Guard used 7 velvet cushions each. The other 3 The Royal Guard shared the rest equally. How many velvet cushions did each of the other The Royal Guard get? = 51 (G) · There were 28 jeweled rings in all. 16 jeweled rings were set aside. The rest were shared equally among 2 The Royal Guard. How many jeweled rings did each get? = 6 (C) · The Scribe collected 11 jeweled rings in the morning and 9 jeweled rings in the afternoon, then split them equally among 2 The Royal Guard. How many jeweled rings did each get? = 10 (I) · The Scribe earned 2 royal crowns in each of 2 rounds, plus 91 bonus royal crowns. Then 10 royal crowns were lost. How many royal crowns are left? = 85 (R) · There were 296 silver spoons in all. 4 The Royal Guard used 33 silver spoons each. The other 4 The Royal Guard shared the rest equally. How many silver spoons did each of the other The Royal Guard get? = 41 (L) · The Scribe filled 3 boxes with 2 royal crowns each, then found 48 more royal crowns. How many royal crowns are there in all? = 54 (B) · The Scribe earned 2 velvet cushions in each of 3 rounds, plus 28 bonus velvet cushions. Then 15 velvet cushions were lost. How many velvet cushions are left? = 19 (A)

Clue 4 (Word problems): "PURPLE WIG"

The Scribe found 27 silver spoons yesterday and 90 more today. How many silver spoons in all? = 117 (P) · The Scribe found 44 velvet cushions yesterday and 2 more today. How many velvet cushions in all? = 46 (R) · The Scribe found 25 golden goblets yesterday and 69 more today. How many golden goblets in all? = 94 (U) · The Scribe found 13 velvet cushions yesterday and 58 more today. How many velvet cushions in all? = 71 (L) · There were 100 silver spoons. 21 were used up. How many silver spoons are left? = 79 (W) · The Scribe found 49 jeweled rings yesterday and 19 more today. How many jeweled rings in all? = 68 (E) · There were 37 golden goblets. 26 were used up. How many golden goblets are left? = 11 (I)

Clue 5 (Division facts (1-12)): surviving statement is box 5 → Donnie Kingpin

$110 \div 11 = 10$ · $4 \div 1 = 4$ · $63 \div 9 = 7$ · $8 \div 4 = 2$ · $30 \div 10 = 3$ · $33 \div 3 = 11$ · $24 \div 2 = 12$ · $72 \div 9 = 8$ · $12 \div 2 = 6$ · $7 \div 7 = 1$ · $36 \div 4 = 9$