

Puzzler

LOGIC

P R O B L E M S

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How to Solve Logic Problems

Grid logics example:

Can you discover each child's full name and age?

Clues:

- Miss Brown is three years older than Mary.
- The child whose surname is White is 9 years old.

Solution:

- Miss Brown (clue 1) cannot be Brian. Place an **x** in the Brian/Brown box. She cannot be Mary, so put an **x** in the Mary/Brown box. Miss Brown is therefore Anne. Place a **✓** in that box and an **x** against other possible surnames for Anne.
- Anne Brown is three years older than Mary (clue 1). She must be 10 and Mary, 7. Place **✓**s in the Anne/10, Brown/10 and Mary/7 boxes. Place **x**s in the empty boxes in each row and column containing these **✓**s.
- The chart now reveals Brian's age as 9. Place a **✓** in the Brian/9 box.
- Clue 2 states that White is 9, so he must be Brian. Place a **✓** in the White/9 box and **x** in each row and column containing these **✓**s.
- The unfilled boxes show Green must be the surname of 7-year-old Mary.

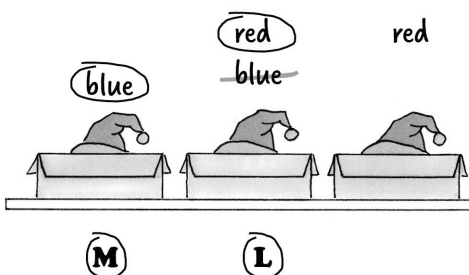
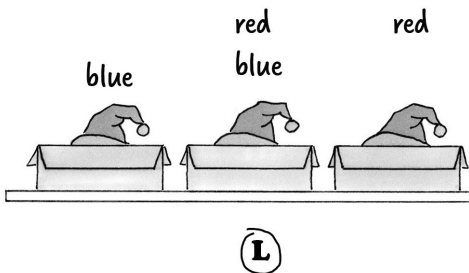
	Brown	Green	White	7	9	10
Anne	✓	x	x	x	x	✓
Brian	x	x	✓	x	✓	x
Mary	x		x	✓	x	x
7	x		x			
9	x	x	✓			
10	✓	x	x			

Picture logics example:

Match each gnome costume to its colour and size.

Colours: blue; green; red

Sizes: S; M; L



Clues:

- The red costume is immediately right of the blue one.
 - The large costume is in the middle.
 - The blue costume is medium.
- After reading clue 1, note down all possible locations for the red and blue costumes above the pictures.
 - Clue 2 says the central box contains the large, so note this below the picture. Circle it, to show that this is definite information.
 - Clue 3 states that blue is medium, and as we know the blue costume can only be in one of the two left-hand boxes, it must be the one on the far left, since the central one is large. We fill in medium and circle medium and blue. We can also cross off blue from above the central box.
 - As red is immediately right of blue (clue 1), it must be in the centre box, so we circle it and cross off red from above the right-hand box.
 - That means the box on the right must contain the small green costume.

Secret Recipe

Last month, several amateur cooks entered the yearly cooking competition at the Keighshire Hotel. It was now down to the last eight competitors and the latest brief was to make an ice cream dessert. Five competitors added an ingredient that caused an immediate and negative reaction from Hector, the head chef of the hotel, who was also the head judge of the competition. Suffice to say, all five were eliminated at this stage. Can you work out the dodgy ingredient each competitor added to their ice cream dessert, what the reaction was from Hector and the vessel or dish the dessert was served in?

Clues

1 Hector grimaced when he tasted Michael's ice cream dessert, which contained neither nutmeg nor star anise.

2 Ruth added salted peanuts to her recipe; she didn't use a shell-shaped dish or a sundae glass.

3 Hector immediately started coughing when he tasted the very hot chilli chocolate ice cream; this didn't come from Tatiana, who presented her dish in a ramekin.

4 Hector raised his eyebrows when he tasted the ice cream in the ornate Chinese rice bowl.

5 The ice cream with the gritty star anise pieces was presented in a decorative gravy boat; this wasn't created by Sally, whose dessert also wasn't in a sundae glass.

6 Hector didn't react by spitting out the sample taken from Hanan's dish.

	Chilli chocolate	Nutmeg	Quince	Salted peanuts	Star anise	Coughed	Grimaced	Raised eyebrows	Shocked	Spat out	Chinese rice bowl	Gravy boat	Ramekin	Shell-shaped dish	Sundae glass
Hanan															
Michael															
Ruth															
Sally															
Tatiana															
Chinese rice bowl															
Gravy boat															
Ramekin															
Shell-shaped dish															
Sundae glass															
Coughed															
Grimaced															
Raised eyebrows															
Shocked															
Spat out															



Competitor	Ingredient	Reaction	Serving dish

Walking...

Three friends have travelled to Edinburgh for a city break and are being enticed by several different souvenir shops, each offering something authentically Scottish for them to bring back as presents for friends and family. Can you say which souvenir shop is offering what souvenir, how much each souvenir costs and which souvenir each friend has their eye on?

Clues

- 1 Olivia Ogle spied a nice tartan scarf in one of the souvenir shop windows and was determined to get it for her daughter; it was not spotted in Kilt Time.
- 2 Sally snapped up her item from Loch Here.
- 3 Valerie's item was the most expensive and the bagpipes were £7.

	Bagpipes	Nessie toy	Scarf	£7	£8	£9	Olivia Ogle	Sally Survey	Valerie View
Kilt Time									
Loch Here									
Scot To See									
Olivia Ogle									
Sally Survey									
Valerie View									
	£7								
	£8								
	£9								

Store	Item	Price	Friend

...Tour

The three friends from the puzzle above have decided to sign up for a walking tour. From these clues and the information gathered previously, can you work out what sights they're each particularly excited to see, in what order each sight will be seen and what they're each wearing to keep warm?

Clues

- 1 The friend who spent £8 is most excited to see the view from Arthur's Seat.
- 2 The lady wearing the thick coat will see their sight last; they didn't shop at Kilt Time.
- 3 The friend who bought a stuffed Nessie isn't wearing a hat and gloves or excited to see Edinburgh Castle, which will be the sight seen first.

	Arthur's Seat	Castle	Old Town	First	Second	Third	Hat and gloves	Thermals	Thick coat
Olivia Ogle									
Sally Survey									
Valerie View									
Hat and gloves									
Thermals									
Thick coat									
First									
Second									
Third									

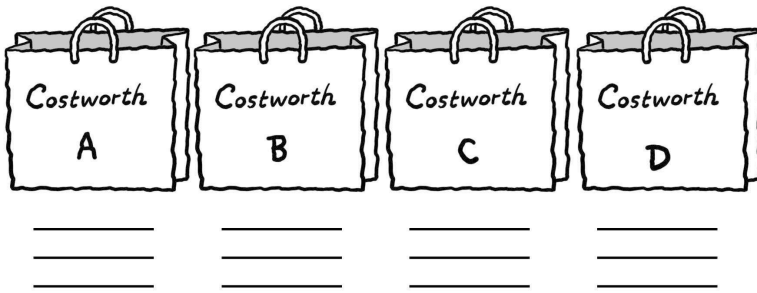
Friend	Sight	Order	Clothes

Shopping Spree

Caroline has just returned from a hard afternoon's shopping at the Costworth's annual clearance sale, famous for good bargains on items of questionable taste, and has lined her shopping bags up to inspect her haul. Each bag contains one item of clothing, one item of homeware and one miscellaneous item. Can you identify the three items in each bag?

Clues

- 1 Bag B contains a whisk with a sausage-shaped handle, and bag D does not contain the transparent jacket.
- 2 The fluorescent polka dot socks are in bag C but are not with the hospital-themed
- 3 The purple and orange-striped T-shirt is with the broccoli-scented candle, wrapping paper, which is in the same bag as the mirror with the moustache printed in the middle of the glass.
- 4 The cuddly toy squid is with the woolly hat that looks like a brain.



- Clothing:** hat; jacket; socks; T-shirt
Homewares: hand towels; mirror; scented candle; whisk
Miscellaneous items: chocolates; cuddly toy; hairbrush; wrapping paper

Starting tip: Identify which bag the hand towels are in.

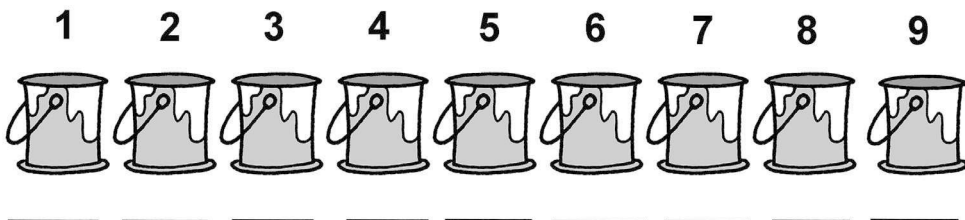
Hue Donnit

Hue Donnit has his own painting and decorating business known as Monet's Worth in Storbury and can often be seen driving around in his branded van complete with the cheesy tagline: 'You get your money's worth with Monet's Worth'. Unfortunately, his kids have decided to play a prank on him by removing the labels from nine of his paints. Can you help him name the contents of each can of paint?

Clues

- 1 The paint in can 8 has the same number of letters in its name as can 6.
- 2 The grape paint is somewhere right of the turquoise paint and is numbered a third of the burgundy paint. The olive paint is closer to the turquoise than the lilac.
- 3 The canary paint is odd numbered and can be found somewhere right of the navy paint and somewhere left of the pumpkin. The navy paint is somewhere to the right of the sand which has one fewer letter in its name than the paint to its immediate right.

- Paints:** Burgundy; Canary; Grape; Lilac; Navy; Olive; Pumpkin; Sand; Turquoise



Starting tip: Work out what is in can 3.

Bon Voyage

Jonathan has finished his studies at Netherlipp Academy and is about to embark on that rite of passage for many youngsters – a gap year. He has been saving up the pay from his Saturday job and sets off for a trip backpacking around Europe this weekend. He hasn't booked anything, and just plans to meander across the continent until his money runs out. Before he goes, various friends and family are meeting up with him to wish him safe travels and give him gifts to help him on his adventures. Can you match the group that farewelled him to the day they met up, and the useful and not-so-useful gifts that each presented him with?

Clues

1 Jonathan could always rely on his grandparents to present him with cash; in this case, an envelope generously stuffed full of euros.

2 Jonathan's next-door neighbours had dug out a guidebook to Belgium that they had used on their honeymoon in 1983 for him.

3 Jonathan had mentioned to one group, not his workmates, that if his money stretched that far, he might go snorkelling in the Mediterranean Sea. They had therefore bought him an extremely bulky snorkelling set that would take up about a third of his backpack. Fortunately, they had also got him a mini first aid kit with some safety essentials.

4 Jonathan met up with his school friends the day before the group that gave him the totally useless (but very funny) beer can hat with attached straws, and the day after his immediate family.

5 The group Jonathan met up with on Friday had heard that there was rain forecast, so had brought him a golf umbrella that was longer than his backpack.

6 He was given the extremely useful multi-region plug adaptor on Wednesday evening.

7 Jonathan went farewell clubbing with his workmates on Thursday. They gave him neither the pocket phrasebook, nor the impracticably heavy German dictionary.

	Monday	Tuesday	Wednesday	Thursday	Friday	Cash	First aid kit	Money wallet	Phrasebook	Plug adaptor	1980s guidebook	Beer can hat	Dictionary	Golf umbrella	Snorkel and flippers	
Grandparents																
Immediate family																
Neighbours																
School friends																
Workmates																
1980s guidebook																
Beer can hat																
Dictionary																
Golf umbrella																
Snorkel and flippers																
Cash																
First aid kit																
Money wallet																
Phrasebook																
Plug adaptor																

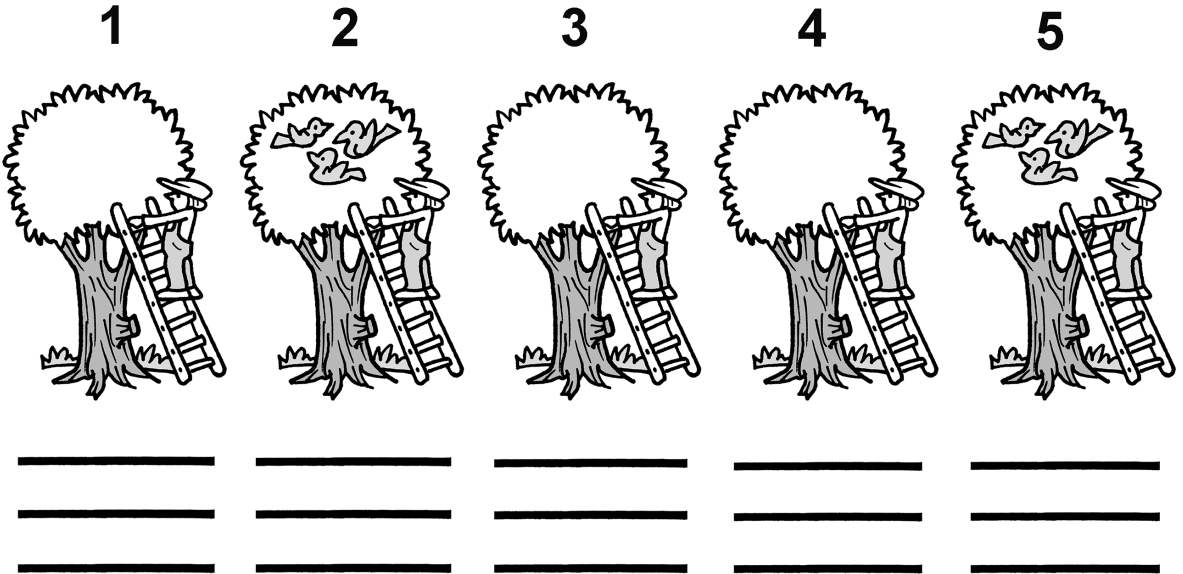
Group	Day	Useful gift	Impractical gift

Pick of the Crop

It is fruit-picking season at Ripen Manor. Five seasonal workers are out in the orchards picking the fruit. Each picker specialises in one variety of fruit and they are all competing to fill as many baskets with their specialist fruit as possible. Can you identify the position of each tree relative to its neighbours, the type of fruit on each individual tree, the name of the picker and the number of baskets they produced?

Clues

- 1 Carlos, who is diligently picking oranges, is not a direct neighbour to the apple tree, which produced an even number of baskets. The apple tree yielded three more baskets of fruit than the peach tree, which appears later in the order of trees than the orange tree.
- 2 The amount of fruit produced by the tree in position 1 is exactly three baskets. The number of baskets produced by the trees in positions 4 and 5 combined is less than the number of baskets produced by the trees in positions 1 and 2 combined.
- 3 Yuuki, who is not working next to the lemon tree, which produced the most fruit overall, was disappointed his tree only produced four baskets of fruit.
- 4 The peach tree does not have any birds in it.
- 5 Neither Carmine nor her neighbours produced an even number of baskets.
- 6 Rosario's neighbour to her right does not have any birds in its tree.
- 7 Benedict is not working on the tree in position 4.



Pickers: Benedict; Carlos; Carmine; Rosario; Yuuki
Trees: apple; lemon; orange; peach; plum
Number of baskets: 1; 2; 3; 4; 7

Starting tip: Identify the number of baskets produced by each tree.

Answers

Page 3

Secret Recipe

Hanan, star anise, shocked, gravy boat.
Michael, quince, grimaced, sundae glass.
Ruth, salted peanuts, raised eyebrows, Chinese rice bowl.
Sally, chilli chocolate, coughed, shell-shaped dish.
Tatiana, nutmeg, spat out, ramekin.

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Walking...

Kilt Time, Nessie toy, £9, Valerie View.
Loch Here, bagpipes, £7, Sally Survey.
Scot To See, scarf, £8, Olivia Ogle.

...Tour

Olivia Ogle, Arthur's Seat, third, thick coat.
Sally Survey, Edinburgh Castle, first, hat and gloves.
Valerie View, Old Town, second, thermals.

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Shopping Spree

A, jacket, mirror, wrapping paper.
B, hat, whisk, cuddly toy.
C, socks, hand towels, chocolates.
D, T-shirt, scented candle, hairbrush.

Hue Donnit

1 Turquoise, 2 Sand, 3 Grape, 4 Navy, 5 Canary,
6 Olive, 7 Pumpkin, 8 Lilac, 9 Burgundy.

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Bon Voyage

Grandparents, Friday, cash, golf umbrella.
Immediate family, Tuesday, first aid kit, snorkel and flippers.
Neighbours, Monday, phrasebook, 1980s guidebook.
School friends, Wednesday, plug adaptor, dictionary.
Work mates, Thursday, money wallet, beer can hat.

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Pick of the Crop

1st tree, orange, Carlos, 3 baskets.
2nd tree, lemon, Carmine, 7 baskets.
3rd tree, peach, Rosario, 1 basket.
4th tree, apple, Yuuki, 4 baskets.
5th tree, plum, Benedict, 2 baskets.

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