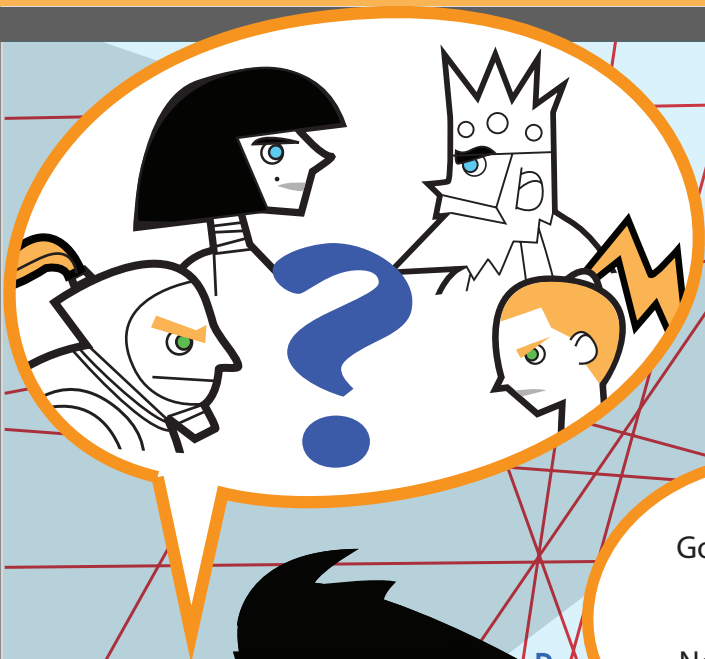


Spy Math

5th
Grade



Going through those
lasers was some
workout!
Now we can find out
who the thief is!

Eggs	
Milk	
Bread	
Total	\$109.26



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** Has an Answer Sheet*

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Good Morning Agent Danger,

Here are the details of your mission:

We've recently been made aware that Walt Warner, the notorious jewel thief, is at it again – he's dispatched his hench-woman to steal jewels from all over England. They began with mom-and-pop jewelry shops in small towns across the world and have moved on to auction houses and even museums. Word has it he has sent his craftiest agent, Patricia Snide, to London to pilfer the crown jewels.

Your job is to find Snide and bring her back to headquarters for questioning. For this mission, you'll need to employ much of your reasoning and deduction skills that have made you such a successful agent in the past.

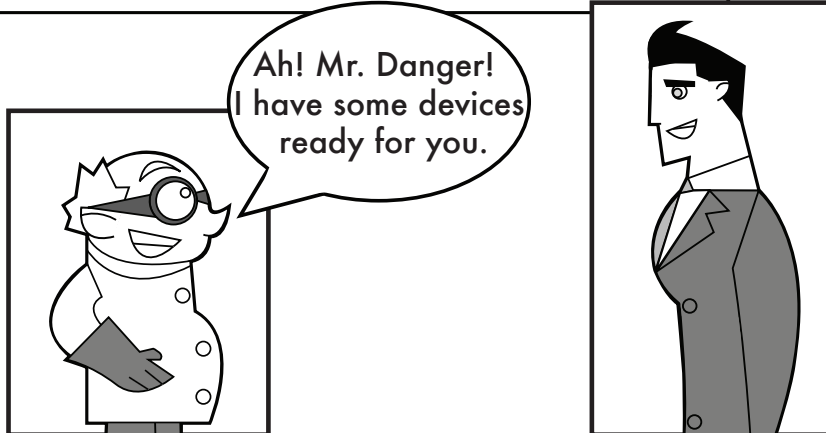
Our sources tell us that Snide has just checked out of the Gilded Hotel. Please proceed to it post haste. We've arranged for a junior detective to accompany you on this journey – please meet your new partner in Alistair's office.

There's a car waiting for you outside when you are ready.

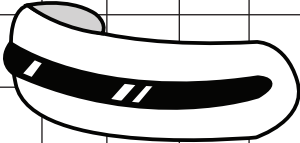
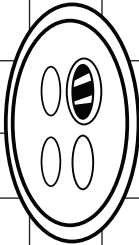
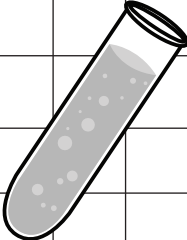
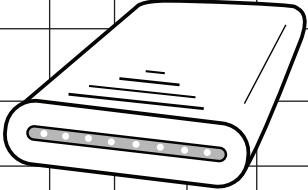
Your Boss,
Zed

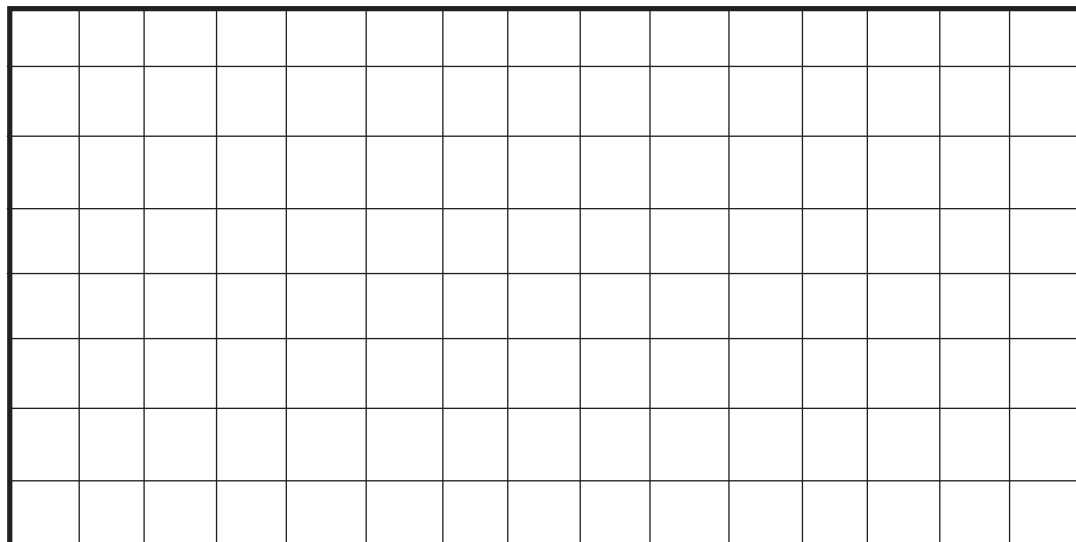


Before Ian embarks on his mission, he'll need to stop and see Alistair Cross, his agency's gadget guru.

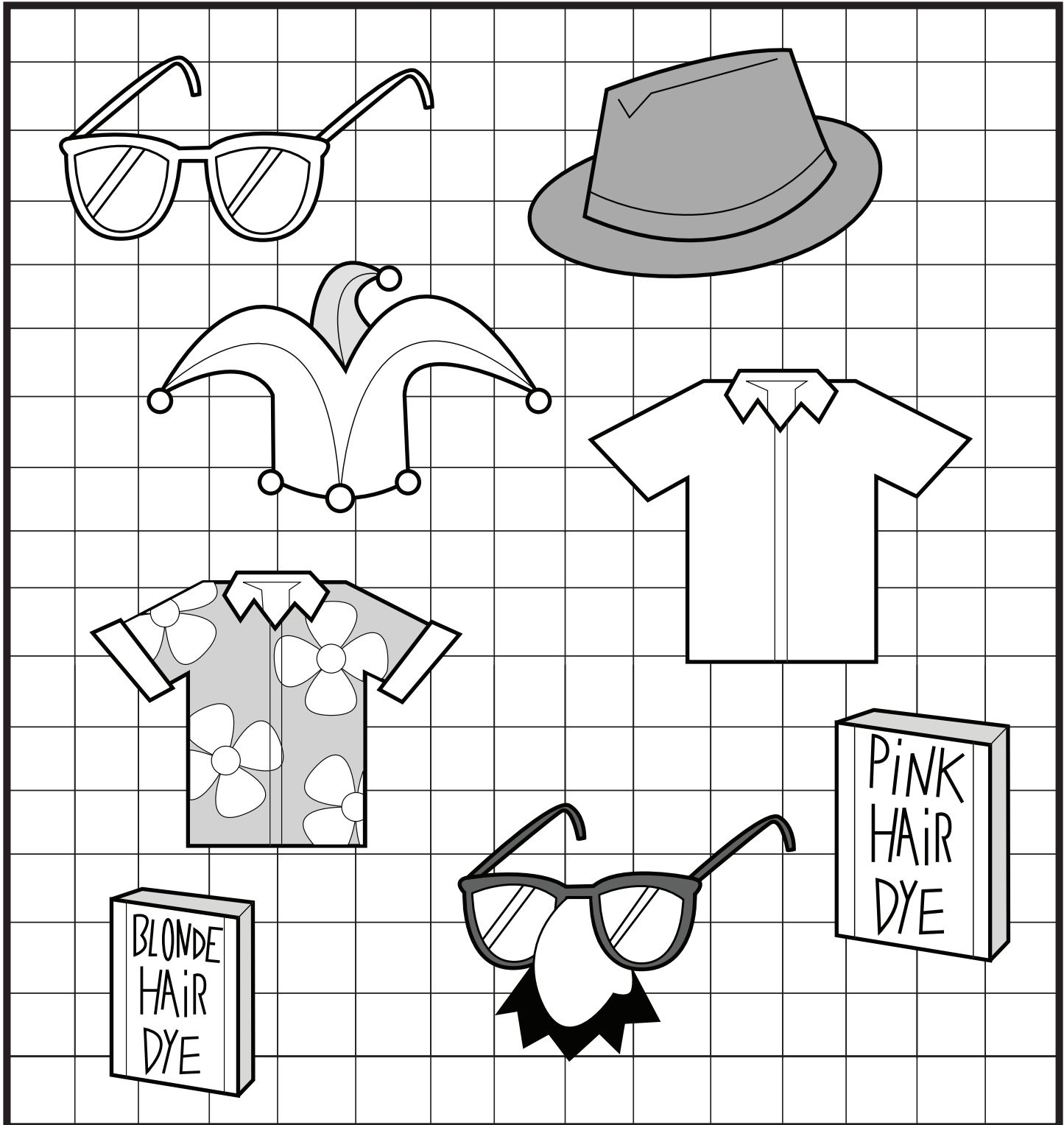


What do you think you'll need to catch a jewel thief? Pick two objects to take with you on your case.

FACE SCANNER	BUTTONHOLE CAMERA	ANTIDOTE	DOCUMENT SCANNER
			
Attaches to your glasses. Able to scan the room for the face you're looking for in less than two seconds. Recognizes facial structure, not features that can be faked, like moustaches or glasses.	Barely detectable. Gets a clear view of an area and transmits the recording back here.	This contains a small but powerful dosage of a cure-all antidote... in case you get into serious trouble.	This device emits a low-brightness light onto paper or soft surface and can read erased markings, or impressions made if a person has written on top of it. Can detect impressions through up to half an inch of paper.
Can you make a device better suited to your needs for this mission? Draw a blueprint for your own gadget below.			



Ian will need to don a convincing disguise before entering the hotel – what do you think works best for this mission? Remember, a good disguise helps you “hide in plain sight”: it should conceal your identity but not attract too much attention. Circle the items he can wear to look less like him.



You've arrived at the hotel. You and Ian have found a note that appears to be written in some kind of code:

UIF GJMF JT JO UIF TBGF

Can you figure out what it says?

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--	--	--	--

--	--

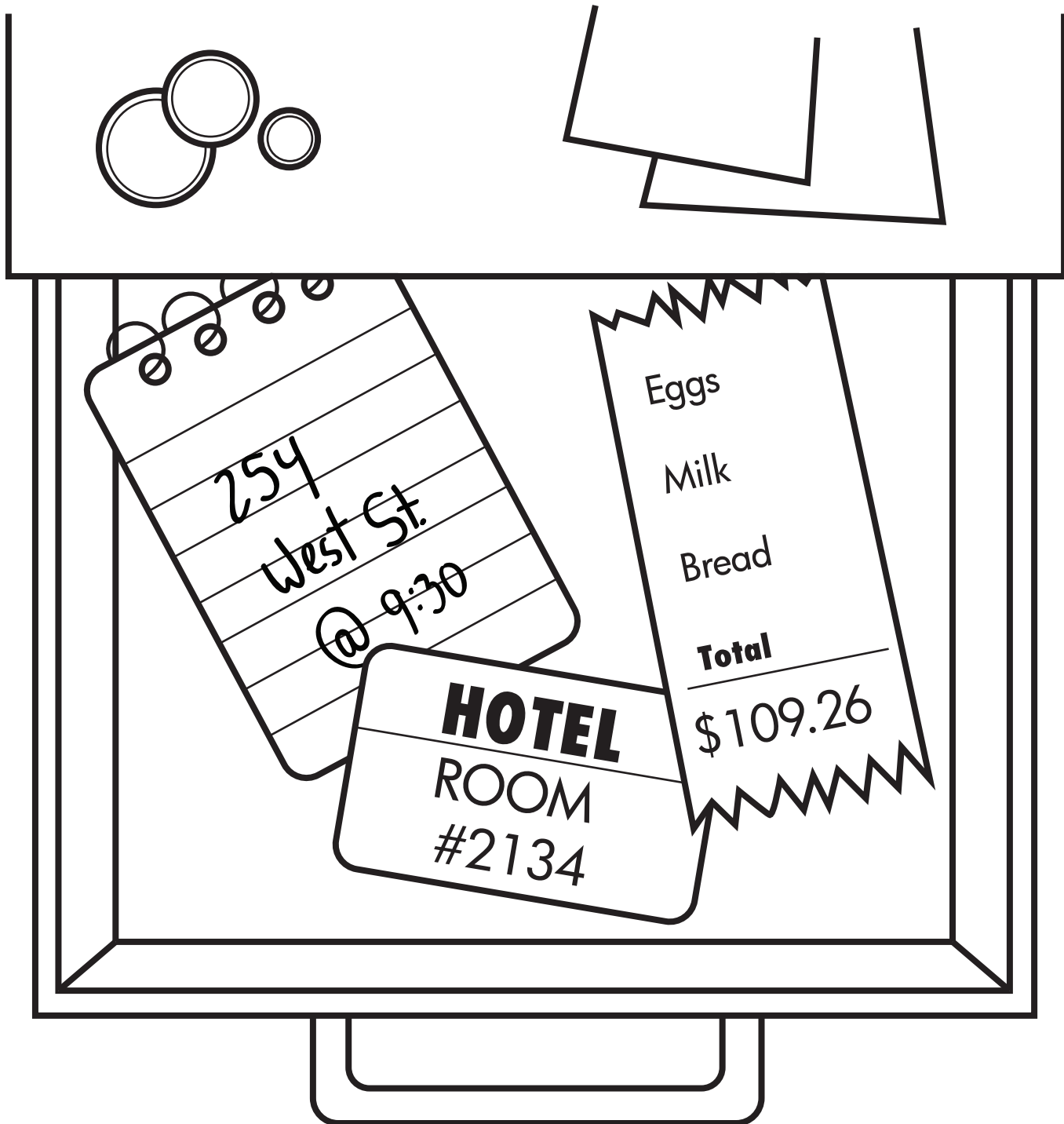
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Answer: THE FILE IS IN THE SAFE. Each letter in the code is the letter after it in the alphabet.

The combination to the safe is hidden within this drawer! Find the item in this drawer that has numbers that add up to 27. Remember: there are many ways to make 27. Try grouping the digits on each item in different ways.



ANSWER: The receipt's total: 109.26 . $10+9+2+6$.

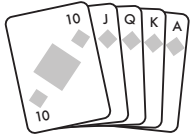
Ian has found the file, but the document inside doesn't make a lot of sense.
What do you think it means?



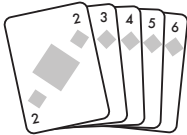
Nice	to see you. I'll	try
Mr.	Smith, not put you in	Danger.
Meet	me at	my
friend	's house. Go	downstairs
for	relaxing nap or to play	a game
of	chess or	cards.
	You'll love it.	-Walt

Hint: try cutting out the note and folding it in different ways!

TRANSMISSION FROM HQ: Every good agent knows how to play poker, in case he needs to get in good with the enemy. Brush up on your poker hands before you meet with Warner's agent.



Royal Flush:
10 to Ace, all of the same suit. Highest hand you can have.



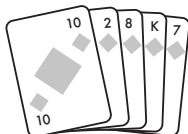
Straight Flush:
Five numbers of the same suit in a row.



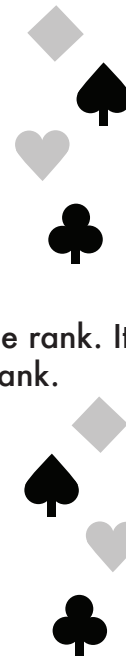
Four of a Kind:
Four cards of the same number (rank)



Full House:
3 cards of the same rank with two cards of the same rank. It's an even better hand if your group of three is of the higher rank.

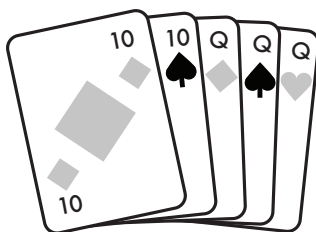


Flush:
5 cards of the same suit, but not in any order.

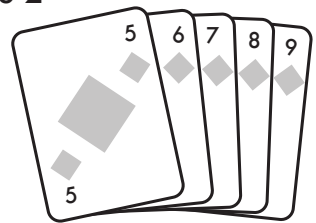
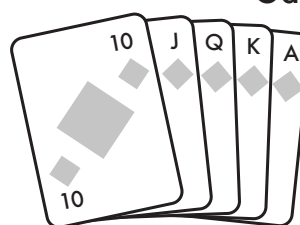


Now, you try. Circle which hand is better in each game.

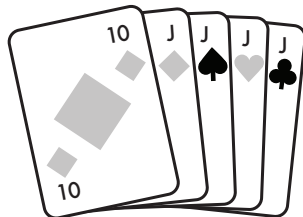
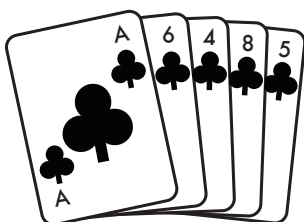
Game 1



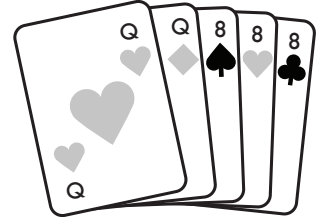
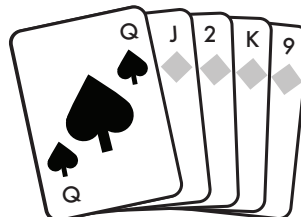
Game 2



Game 3

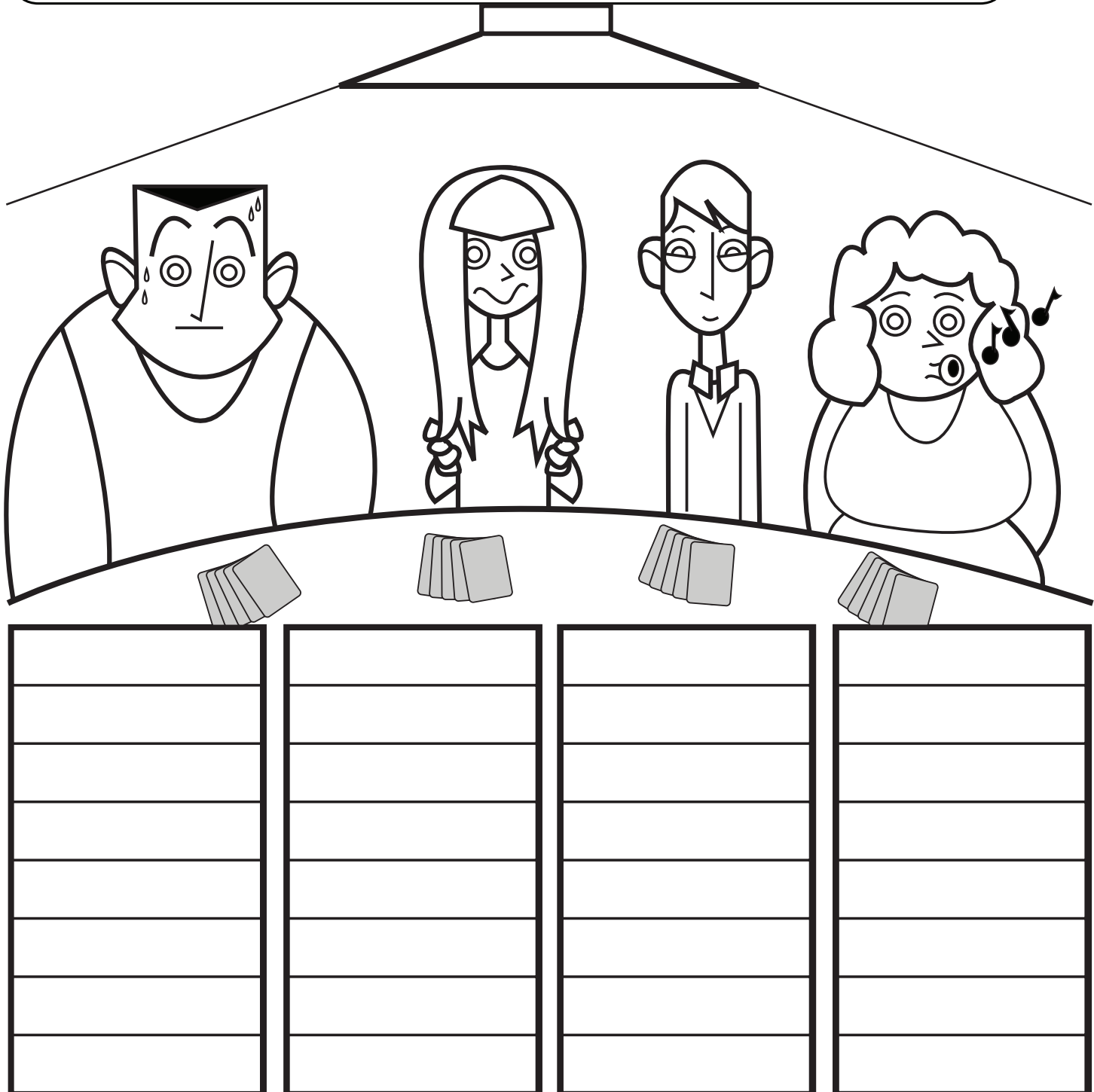


Game 4

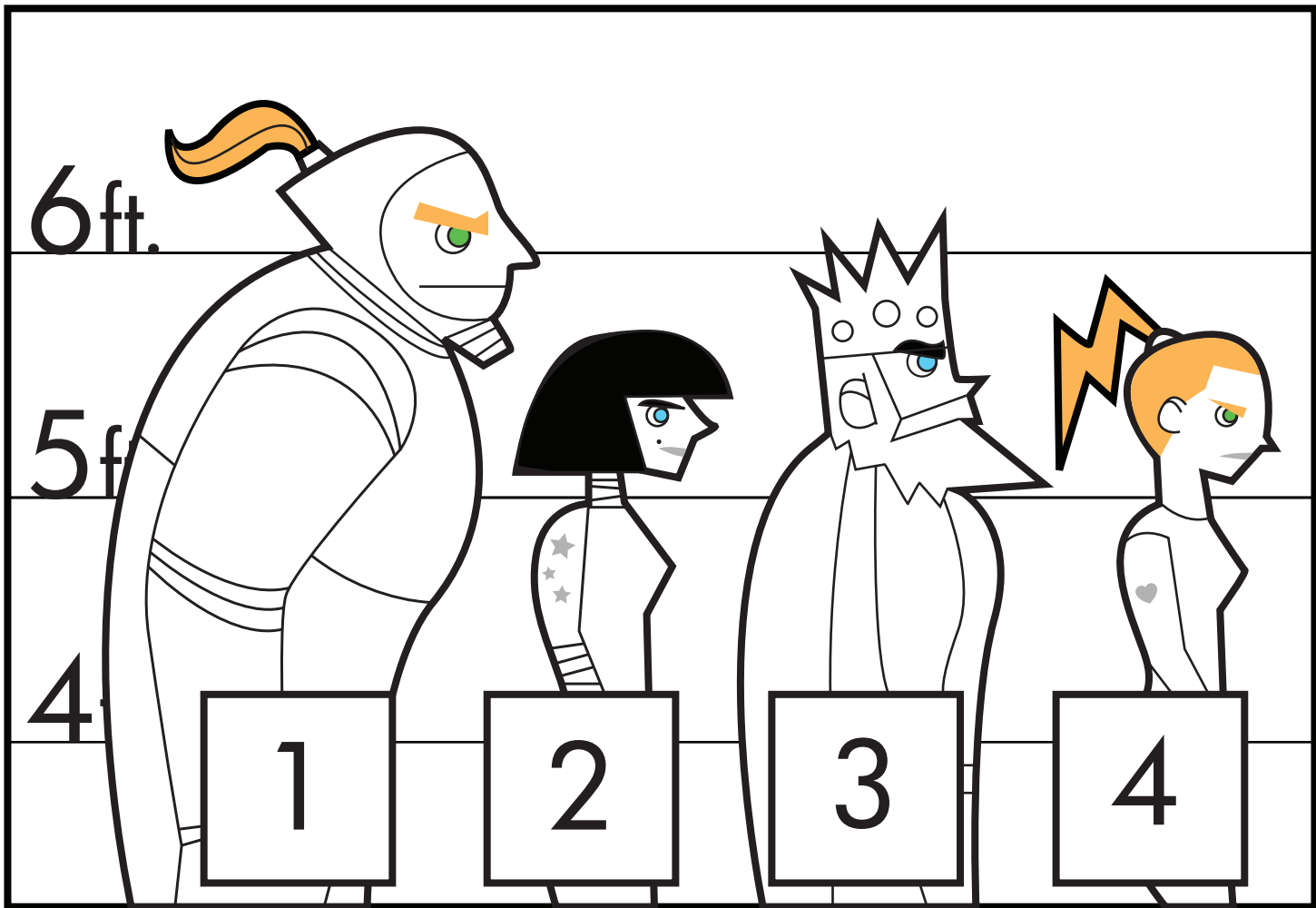


TRANSMISSION FROM HQ: Every poker player has a "tell" – a change in behavior that tells others they are trying to keep a secret about their hand. Poker players often try to learn others' tells so they can determine what their next move might be.

Take a good look at the others around you. Who might be bluffing? Explain what each player's behavior could mean on the lines below.



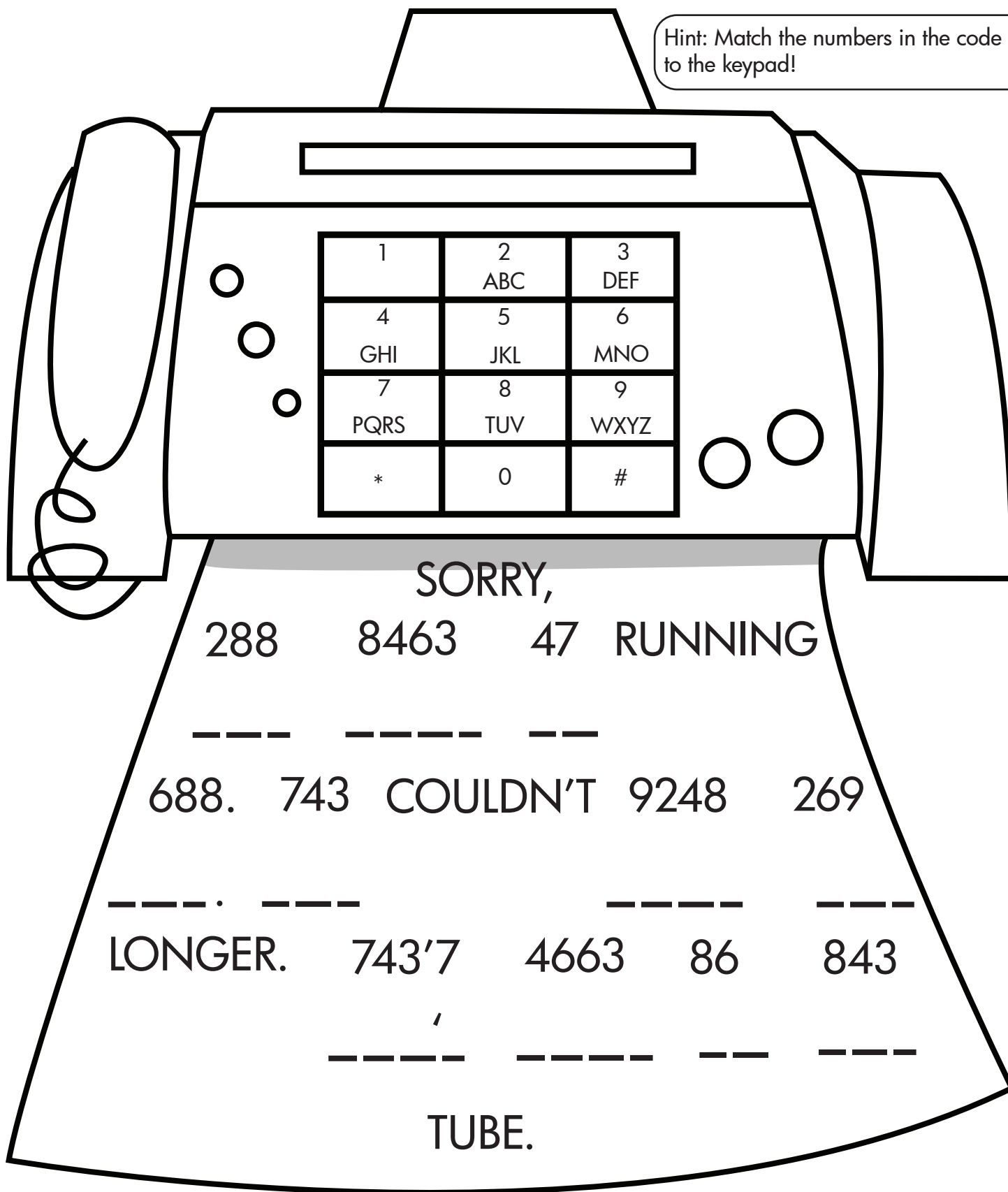
TRANSMISSION FROM HQ: You're too late, Danger! Snide's agent has left the casino and adopted a disguise. We've rounded up the four most likely suspects and brought them back to headquarters. We need you to come back and make an identification.



- The agent is frowning.
- The agent is shorter than the person to the left.
- The agent does not have a ponytail.
- The agent has tattoos.
- The agent does not have green eyes.

Wait! We've got something coming in over the fax. Looks like another riddle from Warner.

Hint: Match the numbers in the code to the keypad!



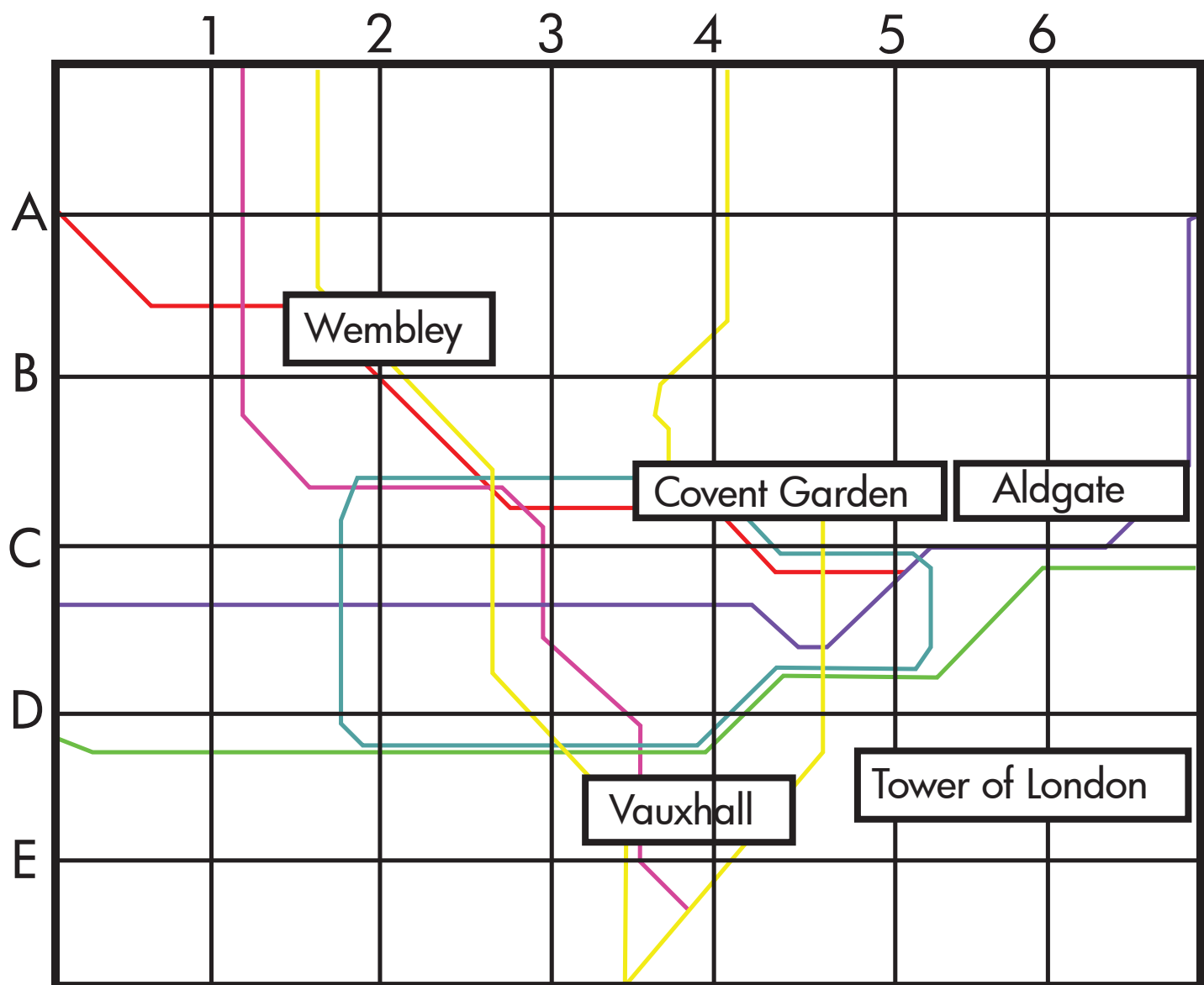
Answer: SORRY, BUT TIME IS RUNNING OUT. SHE COULDN'T WAIT ANY LONGER. SHE'S GONE TO THE TUBE.



Page 2 seems to be another mysterious code...

(C,6) (C,5) (B,2) (E,4) (D,6)

Psst...what Ian doesn't know is that these are map coordinates! Use this map of the London subway system to find out where Snide is headed.



Answers: (C,6)=Aldgate, (C,5)=Covent Garden, (B,2)=Wembley, (E,4)=Vauxhall, (D,6)=Tower of London

Ian's arrived safely at the Tower of London, where Snide is about to make her big heist! However, she's set up a series of laser trip wires to throw him off. Help Ian make his way safely across the room by finding out which laser beam angles are obtuse and which are acute. Once you do that, Ian will know which ones are safest and easiest to step over.

Hint:

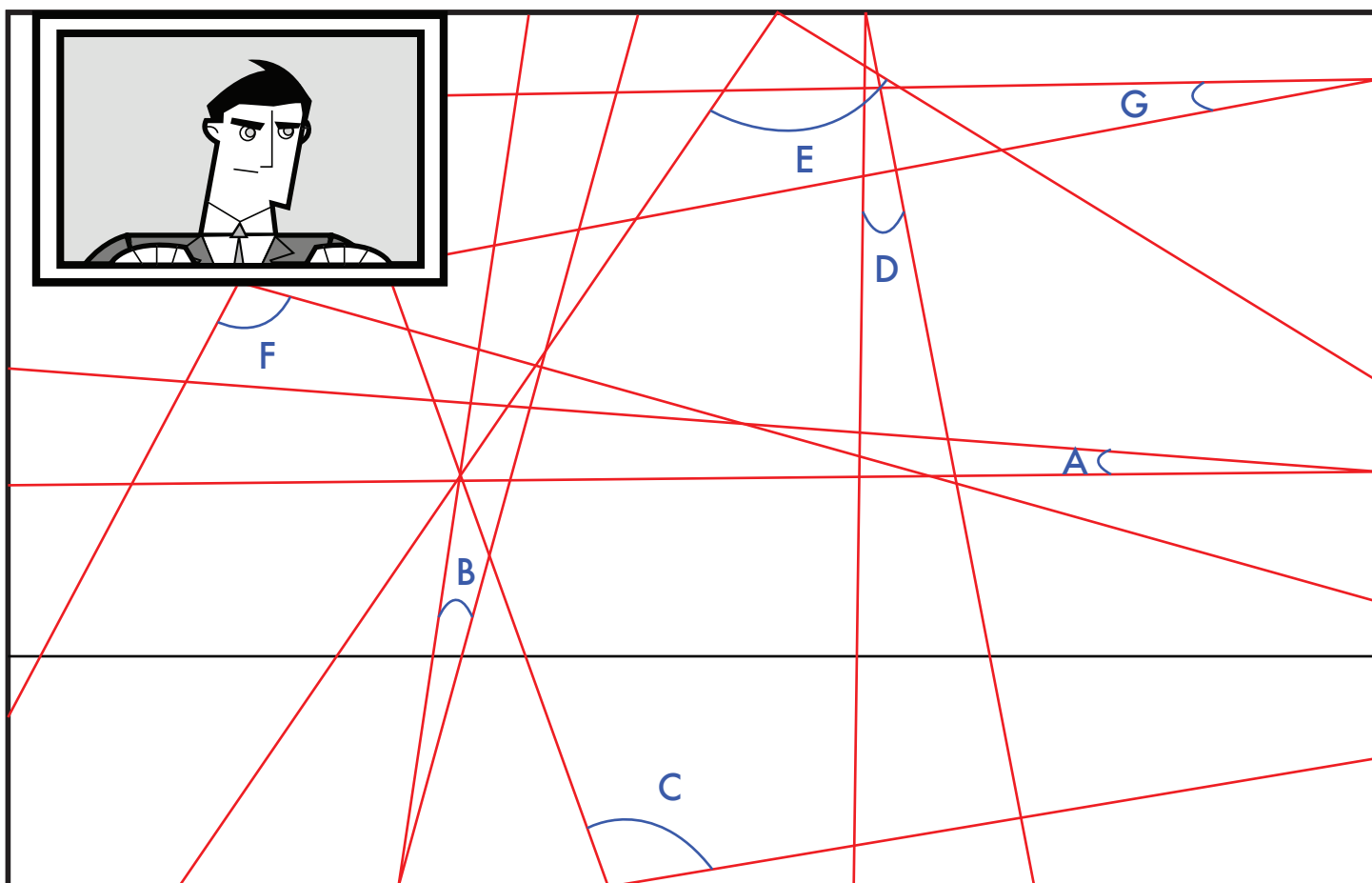
A right angle forms a square angle.



An obtuse angle is greater than a right angle.



An acute angle is less than a right angle.

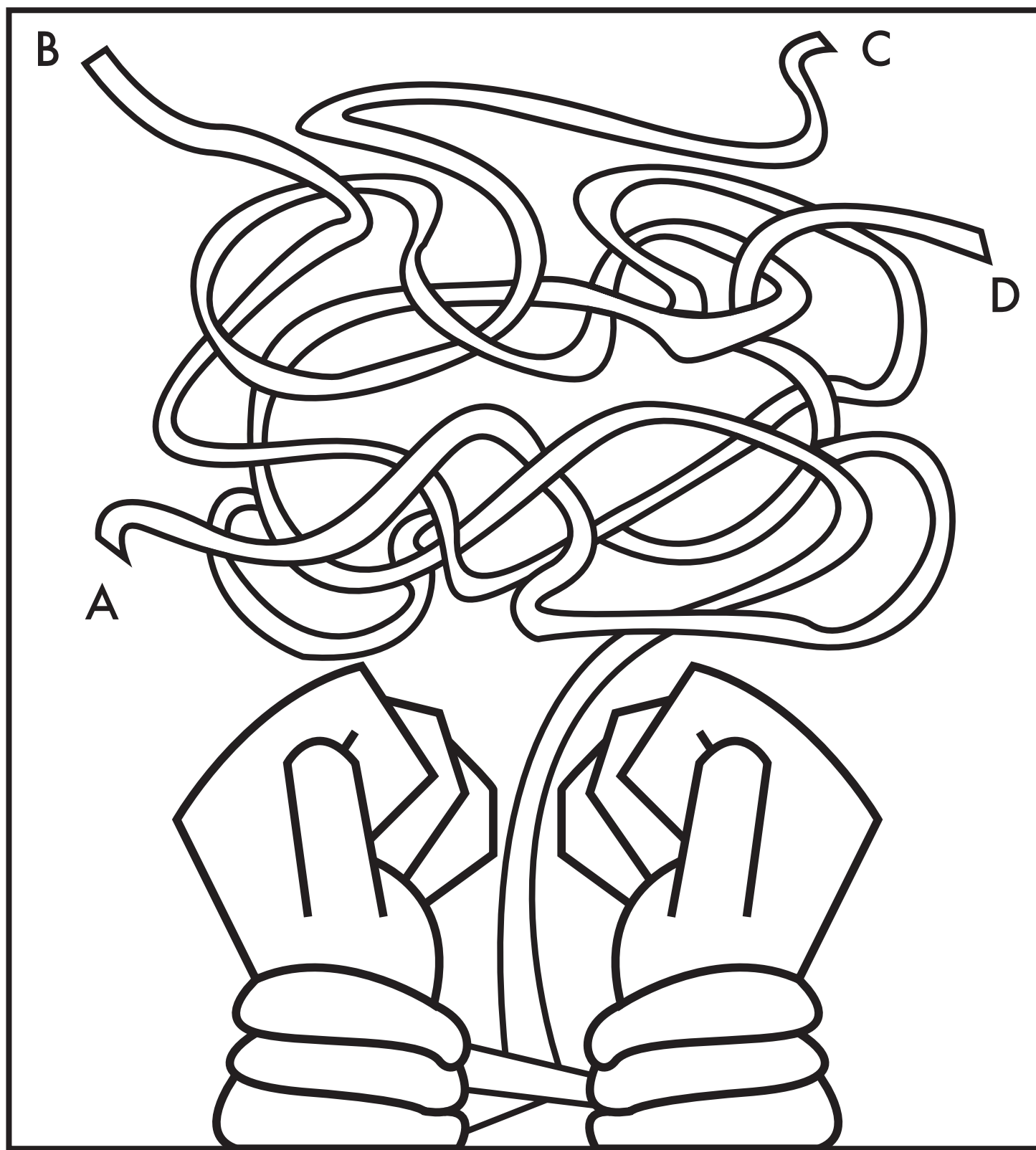


Which of the angles are acute?

Which of the angles are obtuse?

Answers: A, B, D, and G are acute. C, E, and F are obtuse.

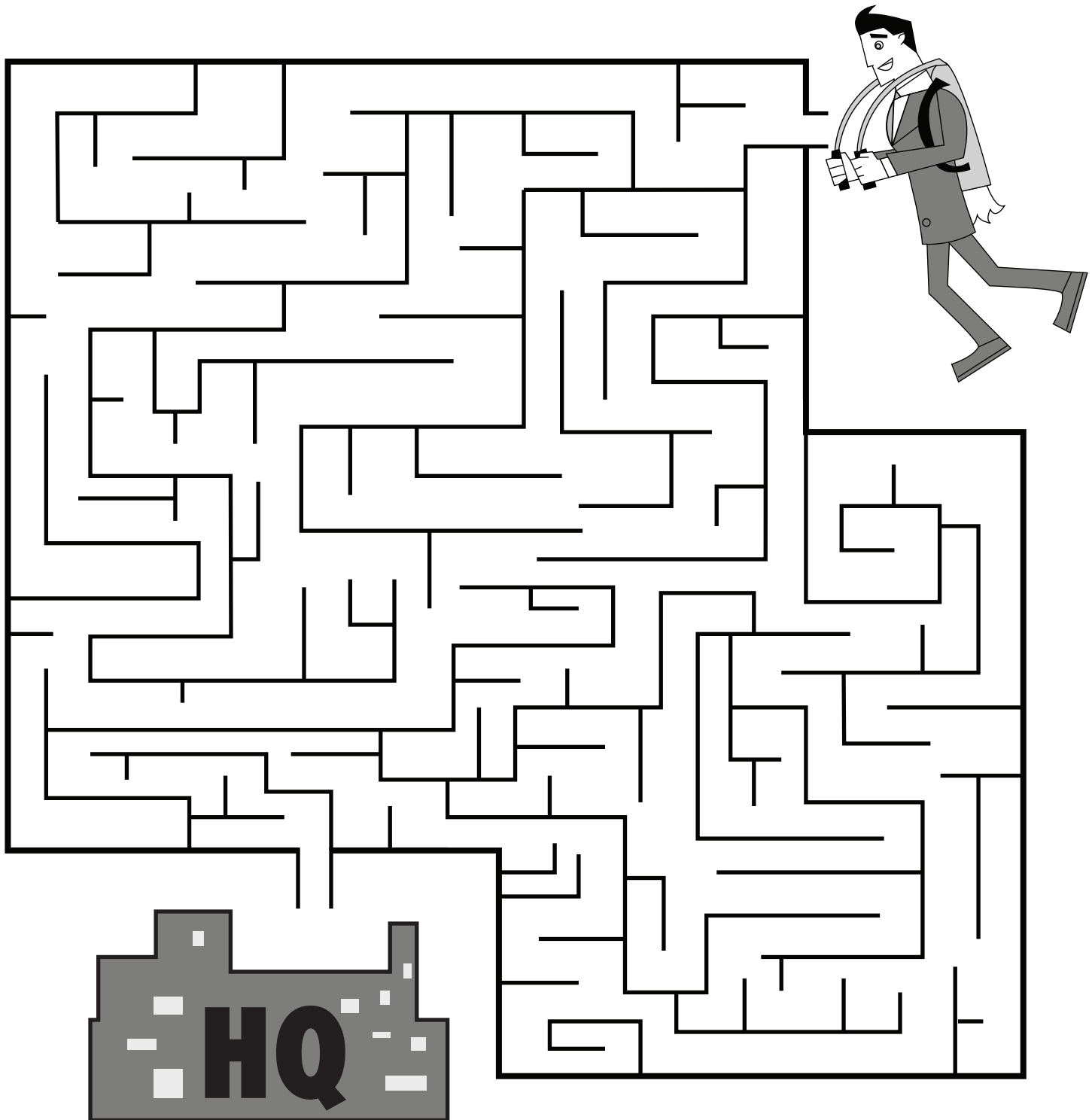
Oh no! You and Danger came face to face with Snide in the Tower and he has been captured for Warner! Help him escape by finding the end of the rope.



Answer: Rope C.

TRANSMISSION FROM HQ: Many thanks, Agent Danger. We've received word that Warner and Snide are in our hands and are on their way to headquarters. Well done.

Help Ian find his way back to HQ!



SECRET SYNONYMS

Find all the synonyms for secret!

INCOGNITO
COVERT
CLASSIFIED
DISGUISED
UNDERCOVER
VEILED
CLANDESTINE
SURREPTITIOUS
CONCEALED
CAMOUFLAGED
CLOAKED
OBSCURED
ENIGMATIC

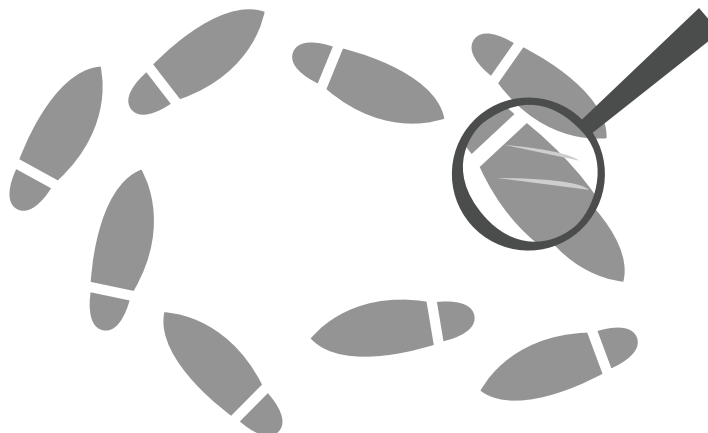
A	C	D	E	G	A	L	F	U	O	M	A	C
E	G	E	U	G	S	I	D	V	E	I	K	N
W	R	E	V	O	C	R	E	D	N	U	O	S
A	R	I	A	Q	M	I	I	C	I	P	M	U
C	B	N	X	S	L	O	F	O	G	H	I	O
L	L	C	R	E	F	A	I	N	M	B	H	I
A	B	O	D	C	E	T	S	C	A	L	Q	T
N	S	G	Q	Y	B	F	S	E	T	X	L	I
D	J	N	T	R	X	I	A	A	I	G	H	T
E	U	I	H	U	D	U	L	L	C	J	K	P
S	Q	T	R	E	V	O	C	E	Z	F	J	E
T	E	O	I	R	G	D	O	D	Y	I	B	R
I	Y	S	L	U	D	F	B	Z	J	Q	K	R
N	D	I	S	G	U	I	S	E	D	N	X	U
E	L	O	V	K	Z	E	C	W	T	B	G	S
C	P	Z	K	T	S	P	U	W	O	O	Y	N
C	E	G	X	J	F	G	R	R	V	P	O	B
D	V	M	D	C	U	D	E	K	A	O	L	C
H	A	W	I	N	D	Q	D	W	Z	M	X	P

FOOTWEAR IMPRESSIONS

If you have an interest in forensic science or simply like the idea of detective work, then this activity is for you. This is a simple but accurate method of taking a footwear impression from a shoe just like the detectives do when they're investigating. So line up some "suspects," i.e. old shoes, and let's see what kind of impression they make!

What You Need:

An old shoe
Cooking spray
Cocoa or or hot chocolate powder
Piece of white paper
Small paintbrush
Magnifying glass (optional)



What You Do:

Find an old shoe to practice on.

Lightly spray the bottom, also called the tread, of the shoe with cooking spray.

Press the shoe with the tread down on the white paper, then lift it away.

Using the paintbrush, apply a small amount of cocoa powder to the wet area using a dabbing motion.

Blow away any excess powder and label your exhibit.

Look at your footwear impression closely with a magnifying glass and see if you can find any accidental features like cuts in the tread or unique marks. This is how criminals are caught!

Try this activity with other kinds of shoes and note the differences!

By Jake Friesen

Detective Constable Jake Friesen is a member of the Forensic Identification Unit with the Peterborough Lakefield Community Police Service in Ontario, Canada. Jake is highly trained in many disciplines of forensic science and is a fingerprint expert in Canada.

INK INVESTIGATION

If your child has or is currently taking a course in chemistry, he or she may be familiar with a process called paper chromatography. In forensic science, this technique can be used to identify different inks. Let's say someone committed a crime by changing the monetary amount on a check. Using chromatography, a forensic scientist could tell whether more than one ink pen was used to write on the check and whether the suspect's ink pen could have been used.

Most inks are not really made up of one colored component. There are actually several different pigments that can make up one ink. In chromatography, the ink is soaked in a solution so that the different pigments will "spread" apart, allowing the various colors to be seen. You and your child can see how chromatography works by conducting the following activity either as a possible science fair project, or just for fun!

What You Need:

Different brands of black markers, felt-tip pens, or ink pens
Tall 8 oz drinking glass
Paper towel
Paper clip or toothpick
Rubbing alcohol or nail polish remover (optional)



What You Do:

Fill a tall glass half-way with water. Cut 3-4 strips of a heavy paper towel and attach the ends to a stiff piece of wire by unbending a paper clip or a toothpick that can rest over the top of the glass.

Next, make a large dot of ink about 1/2 an inch from the bottom of each strip, using a different brand of black marker, felt-tip pen, or ink pen for each strip.

Set the strips in the glass so that the ends of the strips touch the water but the ink dots are above the water level.

As the water soaks up into the paper, the ink will begin to separate into different colors. Note that some inks are not water-soluble; if the ink does not bleed, try using either nail polish remover or rubbing alcohol instead of water.

Forensic science is a fascinating subject. The thing that makes forensic science so exciting to study is not only the process, but also the nature of the problems to be solved. For kids, that translates to a cool science experiment with an exciting twist - catching a criminal!

FINGERPRINT POWDER

Fingerprint powder is an extremely important tool used by forensic specialists and crime scene investigators all over the world. It is generally made up of very fine powders in a variety of colors but can also be very expensive. How about making your own powder and letting your child test his CSI skills?

What You Need:

Cornstarch powder
Measuring cups
Candle
Porcelain or heat resistant dish
Knife
Small bowl
Small paint brush



What You Do:

Measure out 1/4 cup of cornstarch and pour it in the bowl.

Light a candle in a safe area.

Hold the porcelain dish over the candle allowing the flame to touch the bottom of the dish.

You will notice black soot building up on the dish.

Scrape the soot from the bottom of the dish using a knife.

Continue scraping until you have a 1/4 cup of soot. This might take a bit of time!

Place the soot in the bowl and mix with the starch.

Now it's time to investigate! Ask your child to run her hands through her hair or across her forehead. Have your child place some juicy fingerprints on a clear drinking glass. Using the small paintbrush, apply a small amount of fingerprint powder to the fingerprints on the glass using a twirling motion with the brush. You should now see detail in the fingerprints starting to appear.

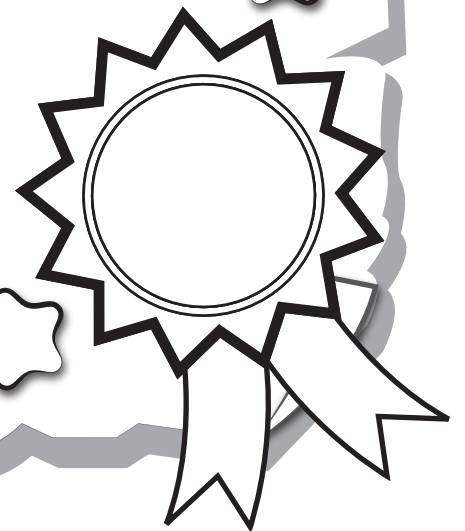
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Great job!

is an Education.com math superstar



Answer Sheets

Spy Math

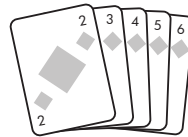
Poker Hands
Jetpack Maze
Secret Synonyms Word Search

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Royal Flush:
10 to Ace, all of the same suit. Highest hand you can have.



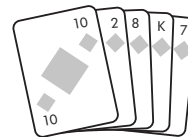
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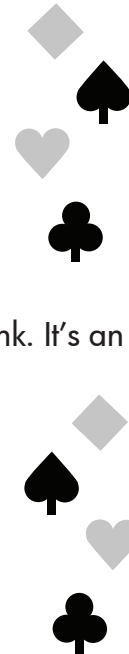
Four of a Kind:
Four cards of the same number (rank)



Full House:
3 cards of the same rank with two cards of the same rank. It's an even better hand if your group of three is of the higher rank.

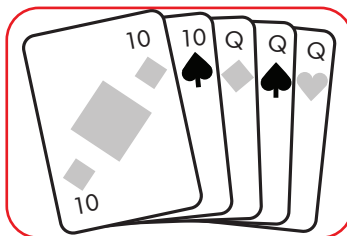
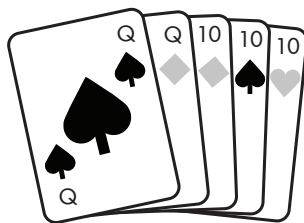


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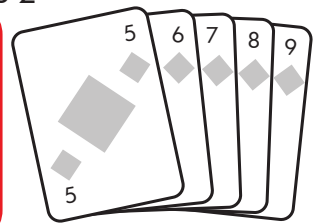
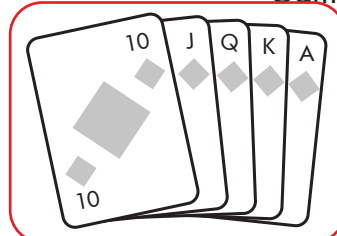


Now, you try. Circle which hand is better in each game.

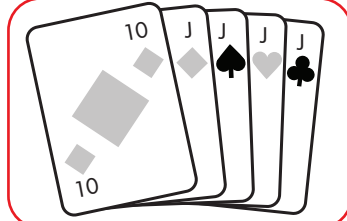
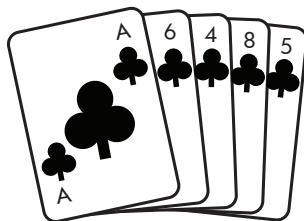
Game 1



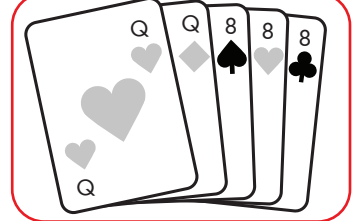
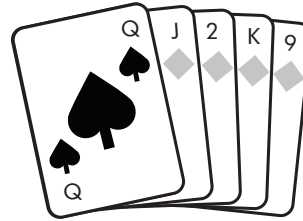
Game 2



Game 3

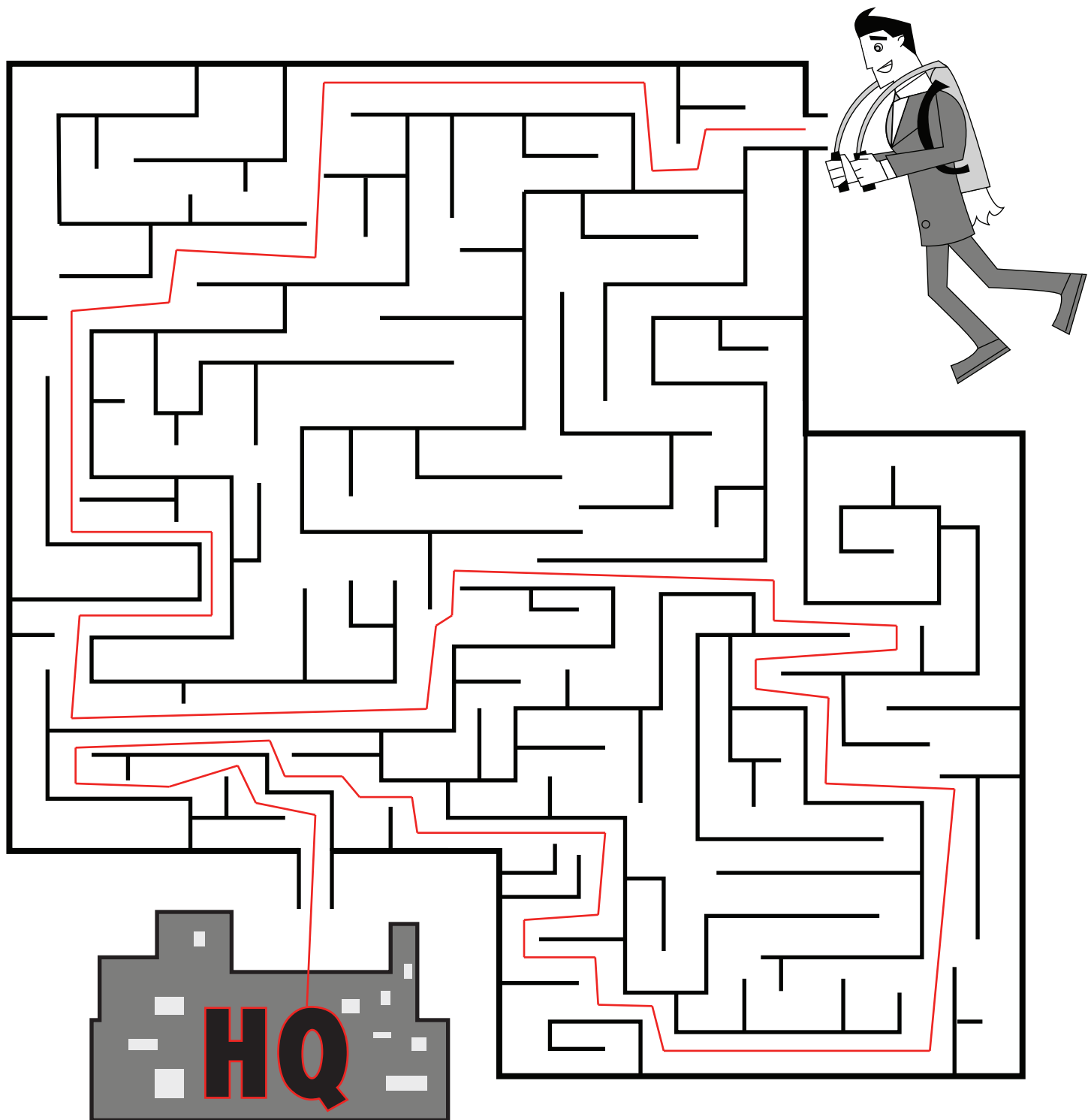


Game 4



TRANSMISSION FROM HQ: Many thanks, Agent Danger. We've received word that Warner and Snide are in our hands and are on their way to headquarters. Well done.

Help Ian find his way back to HQ!



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SURREPTITIOUS
CONCEALED
CAMOUFLAGED
CLOAKED
OBSCURED
ENIGMATIC

A	C	D	E	G	A	L	F	U	O	M	A	C
E	G	E	U	G	S	I	D	V	E	I	K	N
W	R	E	V	O	C	R	E	D	N	U	O	S
A	R	I	A	Q	M	I	I	C	I	P	M	U
C	B	N	X	S	L	O	F	O	G	H	I	O
L	L	C	R	E	F	A	I	N	M	B	H	I
A	B	O	D	C	E	T	S	C	A	L	Q	T
N	S	G	Q	Y	B	F	S	E	T	X	L	I
D	J	N	T	R	X	I	A	A	I	G	H	T
E	U	I	H	U	D	U	L	L	C	J	K	P
S	Q	T	R	E	V	O	C	E	Z	F	J	E
T	E	O	I	R	G	D	O	D	Y	I	B	R
I	Y	S	L	U	D	F	B	Z	J	Q	K	R
N	D	I	S	G	U	I	S	E	D	N	X	U
E	L	O	V	K	Z	E	C	W	T	B	G	S
C	P	Z	K	T	S	P	U	W	O	O	Y	N
C	E	G	X	J	F	G	R	R	V	P	O	B
D	V	M	D	C	U	D	E	K	A	O	L	C
H	A	W	I	N	D	Q	D	W	Z	M	X	P