

STEAM time - solve UNESCO crime

World heritage port of Amsterdam

The port of Amsterdam belongs to top 3 percent of the world.

You are in Amsterdam Centrum and you have €100 euros with you. You see two stores where you want to buy some clothes. You see a cool jacket, it was €60 euros, but now there is 10% discount. You also see a flaired jeans which was €80 euros, but now there is a 30% discount. Can you pay the jeans and the jacket?

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World heritage port of Amsterdam

*Anne frank kept a diary about
the world war.*

You go from Amsterdam Central to Anne Frank by bus.
Without stopping the trip will take twenty minutes. The bus
has to stop at six different stations. On each station the bus
waits two minutes.

You have left on 09.30 A.M. You have an appointment for
Anne Frank at 10:30 A.M. Are you on time?

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World heritage port of Amsterdam

ANSWER

The cool jacket was €60 euros, now it's 10 percent off. 10 percent of €60 euro is €6 euros. To calculate the new prize you have to do €60 euros—€ 6 euros equals € 54 euros. The flaired jeans was €80 euros but now with 30 percent off. 30 percent of €80 euros is €24 euros. €80 euro minus €24 euros equals €56 euros. Together this is €110 euros. So you can not buy both.

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World heritage port of Amsterdam

ANSWER

So there are six stops. The bus stops 2 minutes on each stop. So you have to multiply 6 by 2 equals 12. The trip takes 20 minutes plus 12 minutes are 32 minutes. You have left at 09:30 A.M., 32 minutes later it will be 10:02 A.M.

So you are on time.

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Tourist attraction the Efteling

The efteling is one of the most popular themepark of the Netherlands

Themepark the Efteling is 720 square meters big.
They are going to expend with $\frac{1}{3}$ more ground. How many square kilometers is the Efteling after expending?

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Tourist attraction the Efteling

ANSWER

First you take $\frac{1}{3}$ of 720. So you divide 720 by 3 and multiply by 1. Your answer should be 240. You add 240 up by 720 and the final answer will be 960 square meters after expanding.

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Tourist attraction the Efteling

ANSWER

1. 90 kilometers per hour
2. 700.000 decimeters per hour
3. 30.020 meters
4. 60 kilometers
5. 18:27 P.M.

The answer of the riddle is: fairytale forest.

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World heritage Kinderdijk

*Kinderdijk contains about
nineteen mills in the south of
Netherlands*

A windmill produces 300 square meters of grain per hour per day. The windmill works for seven hours and thirty minutes a day. How many square meters of grain does a windmill produce in a week?

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World heritage Kinderdijk

*Did you know that each mill has
4 blades and 19 mill has 76
blades in total.*

A windmill is broken because, the blades broke down. A windmill has four blades. $\frac{2}{3}$ per blade has to be fixed. One blade is 3 meters long and 600 decimeters wide. How many square meters of boards do you need in total?

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World heritage Kinderdijk

ANSWER

A windmill produces 300 square meters per hour per day.
He works seven hours and thirty minutes. To calculate the square meters per day, you have to multiply 300 by 7,50. That equals 2.250. Now you calculated for one day, multiply this by seven and you have it for a week. So $2.250 \times 7 = 15.750,00$ square meters a week.

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World heritage Kinderdijk

ANSWER

One blade is 3 meters long and 600 decimeters wide. First you need to calculate $\frac{2}{3}$ of one blade. $\frac{2}{3}$ of 3 meters is 2. $(3 : 3 \times 2)$ 600 decimeters is 60 meters so $\frac{2}{3}$ of 60 is 40. You multiply 2 and 40. Equals 80 square meters for one blade. You have four blades so you multiply 80 by 4 = 320 square meters of boards.

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World heritage the Wadden Sea

Seal nursery Pieter Buren

Seal nursery Pieter Buren

This is a part of world heritage the Wadden Sea. Since 1975 is it the biggest seal nursery.



In seal nursery Pieterburen there are 80,000 visitors a year. Because of corona they have a quarter less visitors. The ticket prices go up from €13.65 to €18.45.

How much did they profit?

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World heritage the Wadden Sea

Seal nursery Pieter Buren

ANSWER

First they made $80.000 \times €13.65 = €1.092,000$ a year.

During corona they have a quarter visitors less. A quarter of 80.000 is 20.000. ($80.000 : 4$ is 20.000). So they have in corona 80.000 minus 20.000 visitors is 60.000 visitors. The ticket price goes up from €13.65 to €18.45. So $60.000 \times €18.45$ equals €1.107,000. To calculate the profit you need to do $€1.107,000 - €1.092,000$. This equals €15.000 euros profit.

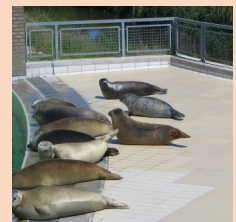
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World heritage the Wadden Sea

Seal nursery Pieter Buren

Seal nursery Pieter Buren

The first seal was Maximo and was a little seal.



In Pieterburen are 120 seals.

An adult seal eats 6 kilo fish a day,

A little seal eats 2 kilo at a day.

30% of the seals are little seals.

The rest is an adult.

One kilo fish costs €7,35

How much money does pieterburen pays for food in one day?

Good luck!

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World heritage the Wadden Sea

Seal nursery Pieter Buren

ANSWER

First you have to know how much little seals you have. 30% from 120 seals is little. 10% (120:10) is 12 seals, multiply that by 3 and you have 36. So there are 36 little seals. 1 seal eats 2 kilo fish. 1 kilo fish is €7.35 x 2 is €14.70. Multiply this by the amount of little seals and you have the answer of the little seals. €14.70 x 36 = €529, 20.

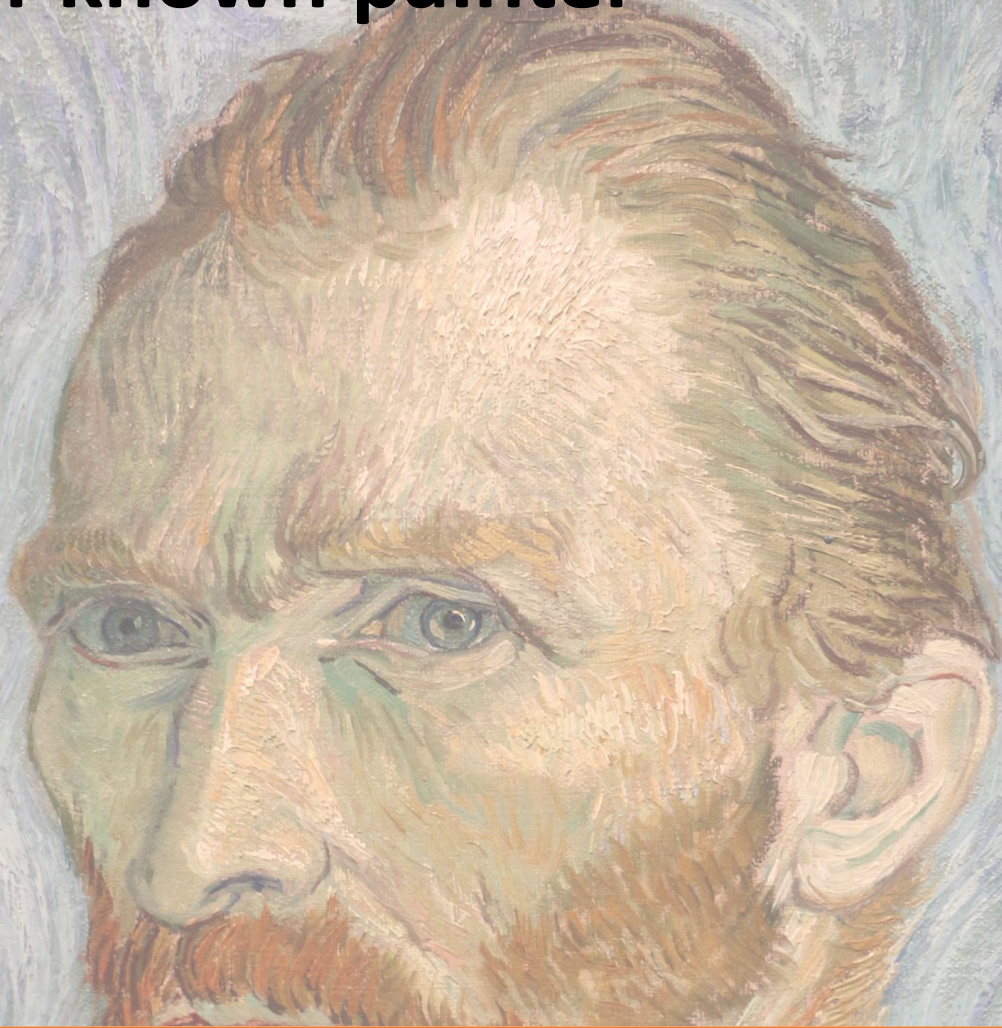
Now you can calculate the adult seals. 30% were little so 70% is an adult. 70% of 120 = 84 seals. 1 adult seal eats 6 kilo fish a day. Multiply that by €7.35 = € 44,10. That's the price of 1 adult seal, now multiply the price by the amount of adult seals. €44,10 x 84 = € 3.704,40.

Now sum up these two prices and you have the final answer.

$$€3.704,40 + €529,20 = €4233,60$$

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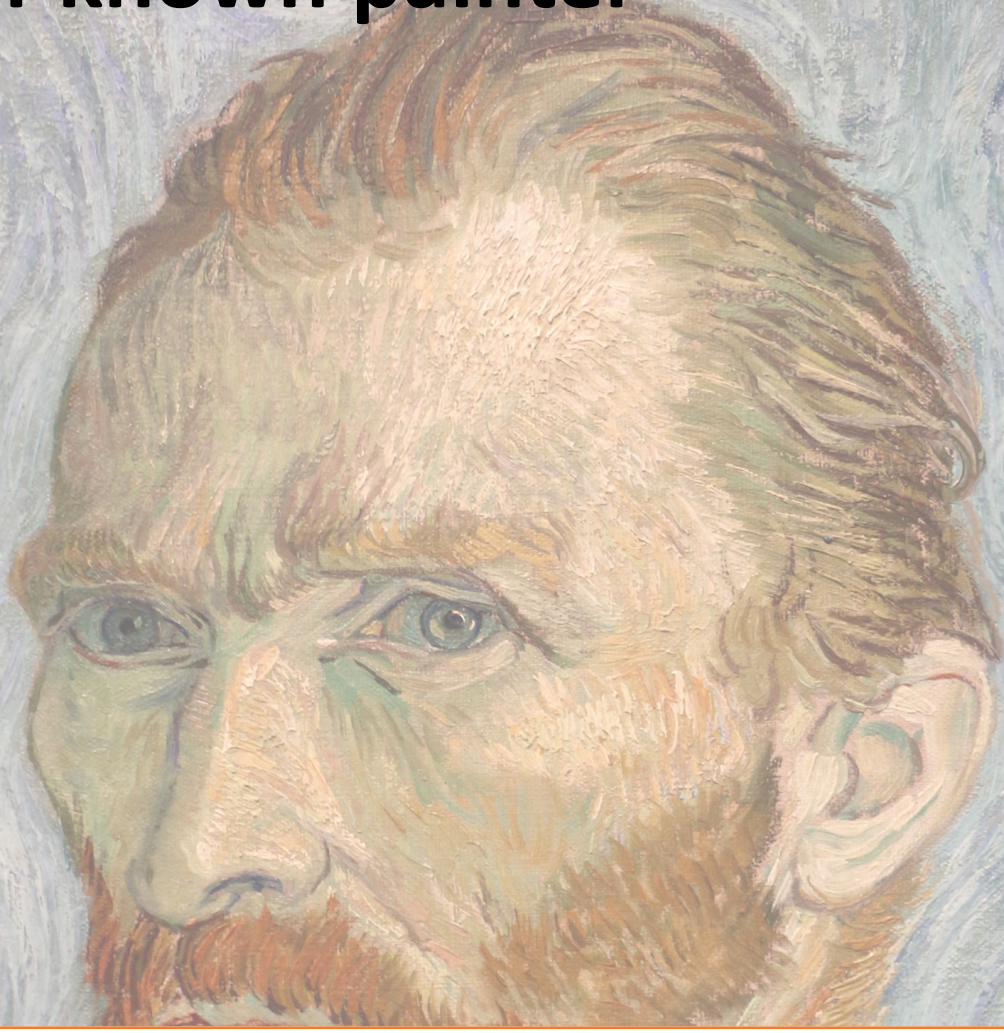
Well-known painter



A painting of Vincent van Gogh costs €20.000 euros. A replica of the painting is 3.500 euros. How much replica's do you have to sell before you earned twice as much as the worth?

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Well-known painter



A self portrait took him four hours to make. Landscapes took him 250 minutes and flowers took him 3000 seconds. Which one took the longest effort?

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Well-known painter

ANSWER

Twice as much worth means a prize of €40.000. A replica costs 3.500. So you divide 40.000 by 3.500 equals 11.4. So they must sell 12 replicas to have twice as much worth.

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Well-known painter

ANSWER

So a self portrait takes him 4 hours to make.
A landscape takes him 250 minutes to make
which is 4 hours en 10 minutes. And
flowers takes him 3000 seconds which is
0.8 hours. So the landscape takes him the
most effort.

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World heritage the Wadden Sea

	8		3			5		
5	1						3	
			8	5		4		
					9		2	3
		8				7		
3	4		7					
		2		9	7			
	3						6	7
		6			1		5	

Bob, Billy, Eric, Saar, Rob,
Kim and Anna are going to mudflat hiking (mudflat hiking is a route along all mudflat islands).
Rob arrives first and Saar arrives last.
Saar immediately says: 'I saw Eric without shoes. They were hidden!' After 10 minutes of research the police knows who did it: 'It was ...!'
Solve this Sudoku and find out who did it.
Use the middle row of the middle box, Good Luck!

If you know the answer, then turn this sheet over.

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World heritage the Wadden Sea

Solve these sums. The codes from the people are:

Bob: $5 \times 17,4 \times 11 - 134 =$

Billy: $17,4 \times 5 \times 3 - 20 + 7 =$

Saar: $19,4 \times 5 \times 3 : 2 + 8,5 =$

Rob: $18,5 \times 11 \times 2 - 58 + 16 =$

Kim: $18 \times 23 : 3 \times 2 - 90 - 23 =$

Anna: $14,3 \times 5 \times 2 \times 3 - 187 + 9 - 69 =$

Who is the hider?

Good Luck!

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World heritage the Wadden Sea

ANSWER

The solution of the middle row of the sudoku is 163.

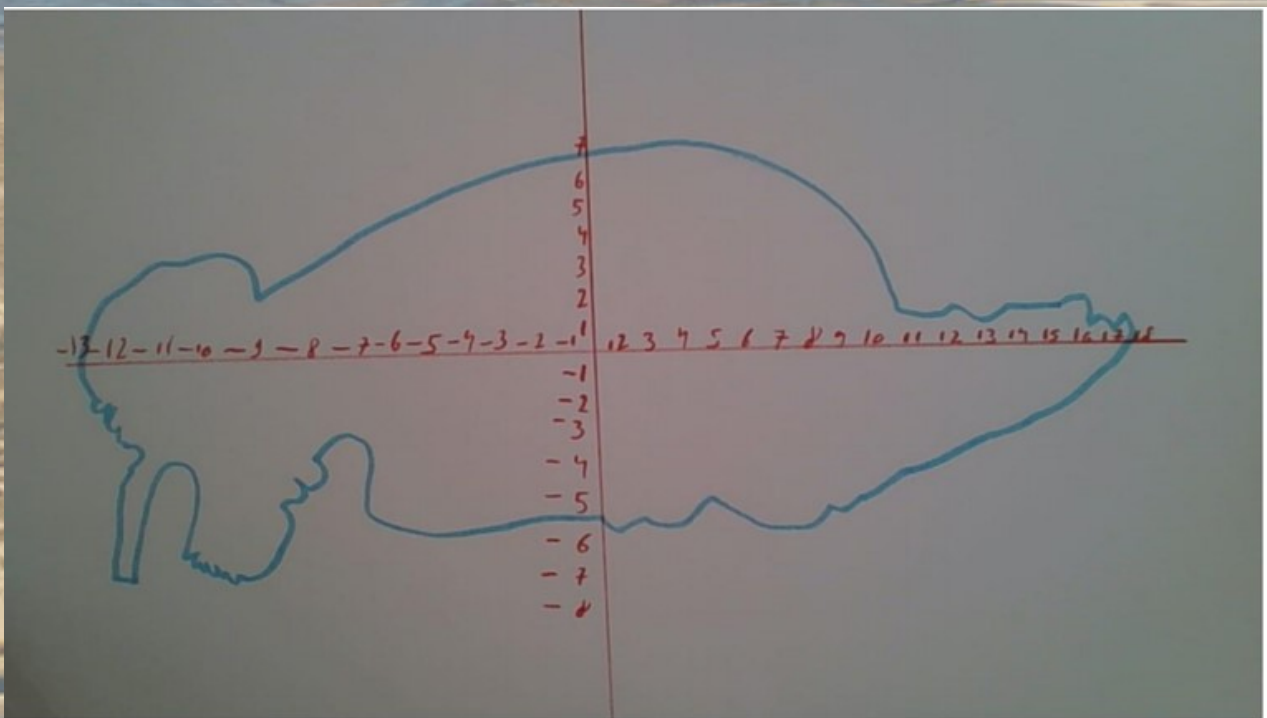
If you look to the different solutions of the persons, you see that Kim is the hider.

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World heritage the Wadden Sea

The family Brenninkmeijer loves to go mudflat hiking. They bought a ring for €6000 euros, so this ring is very special to them. They went mudflat hiking and lost the ring.

Help the family get their ring back. They know the coördinates. You find the right coördinates to sum up these numbers: $7 - 5 - 6 - 8$ divide this by 4. Divide this answer by 2. Show on the map where the ring got lost.



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World heritage the Wadden Sea

ANSWER

First you sum up $7+5+6+8$ equals 36. When you divide this by 4 you get 9. Divide this by 2, you get 4,5. That's the coordinate.

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World heritage the Wouda pumping station

The Wouda pumping station has to work eight hours for 230 square meters of water. You need 375 square meters of water How much percent do you need more to get this?.



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World heritage the Wouda pumping station

There is too much water because of the heavy weather. There is 320m^3 water in the sea, it has to be 210m^3 . The Wouda pumping station pumps 20m^3 of water in one hour. How long does it takes to get 210m^3 ?

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World heritage the Wouda pumping station

ANSWER

$375 - 230 = 125$. You need 125 square meters more. 125 of 375 is $\frac{1}{3}$ or 33,33 percent.

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World heritage the Wouda pumping station

ANSWER

$320 - 210 = 110$ square meters. In one hour you pump 20 square meters. You divide 110 by 20 and that equals 5,5 hours.