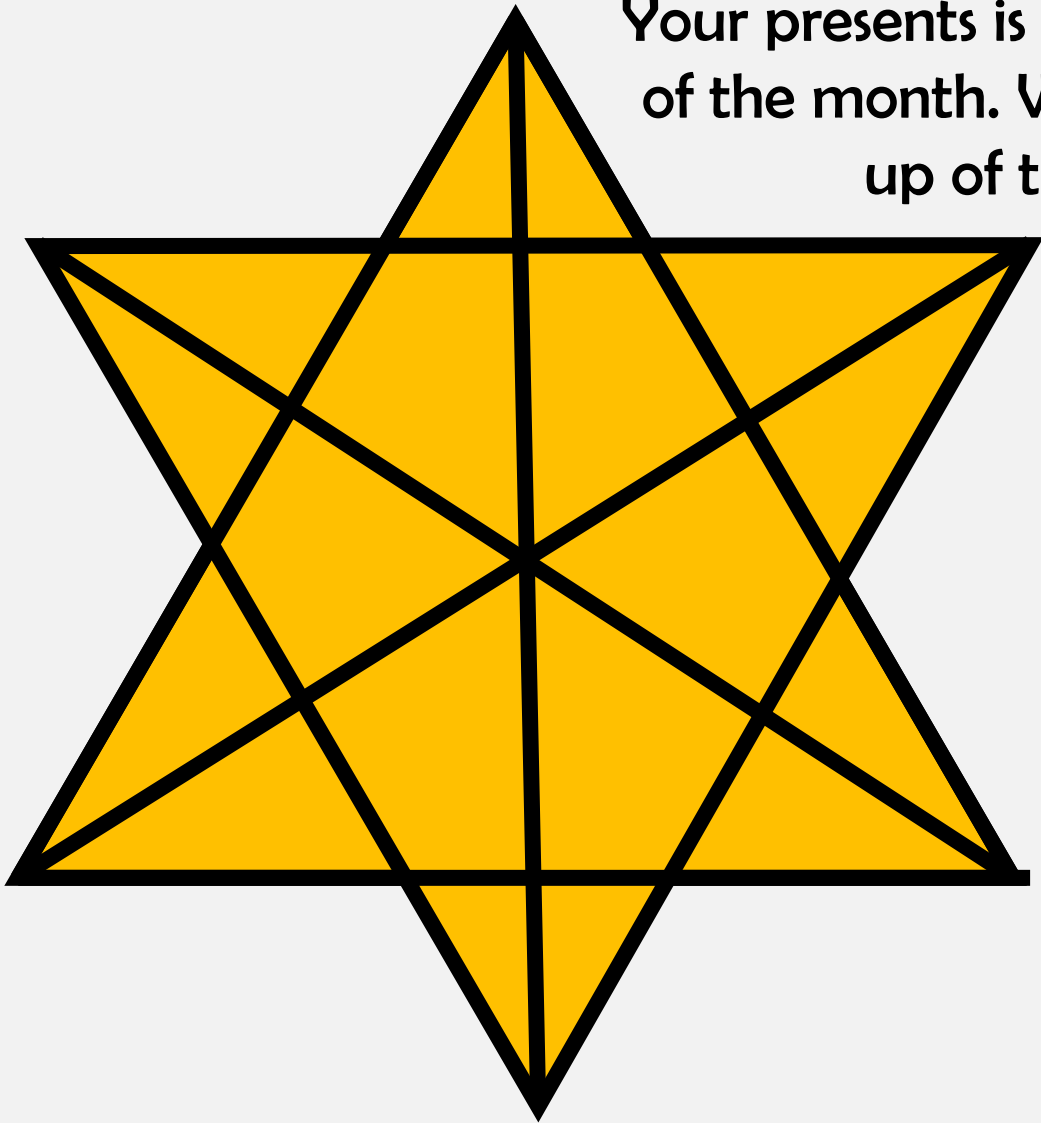


Take part in our daily challenges for advent!
#STEMGlasgow



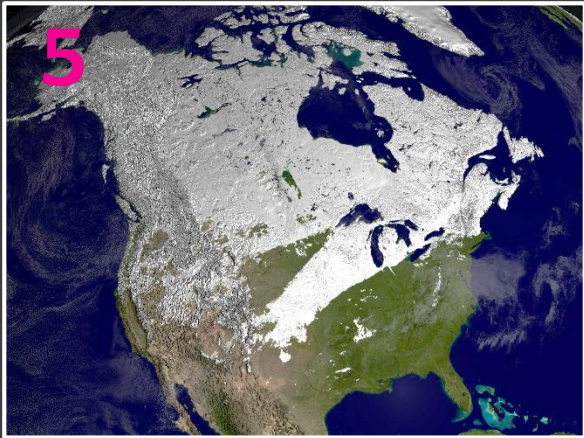
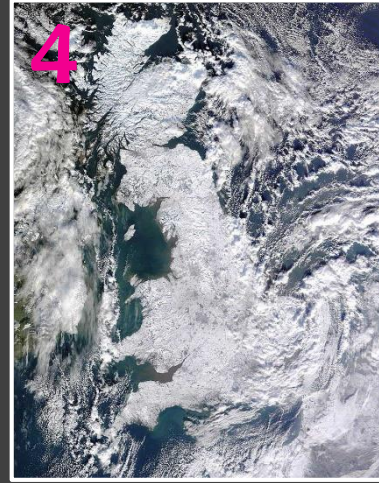
Your presents is requested to help Alex with the first advent challenge of the month. While decorating her tree she noticed her star is made up of triangles. How many triangles are in the star?



I'm looking fir a bit of help with this first challenge. Can yew work it out?



Last weekend was the coldest since February and it covered Glasgow in a layer of frost. Hannah is looking at the effects of cold weather across the planet. Can you help her identify and name the countries that have been covered in frost?



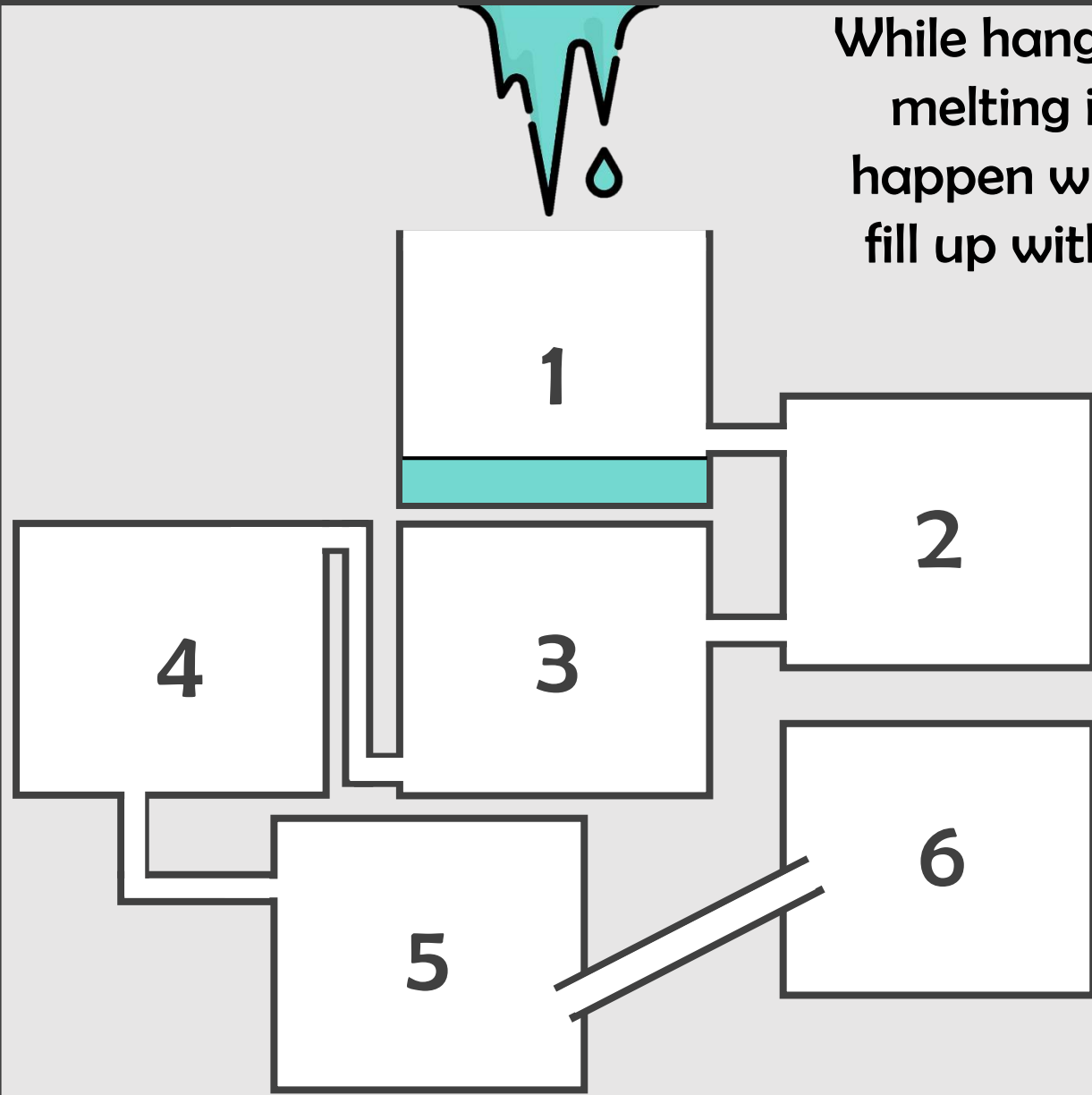
You snow the drill,
Tweet your answer
with #STEMGlasgow



#STEMGlasgow



While hanging her Christmas lights Claire noticed a lot of ice melting into her gutters. She is worried about what will happen when it melts. Can you work out which gutter will fill up with water first from the melting icicle? Tweet your answer with #STEMGlasgow



This is snow laughing matter!



#STEMGlasgow



Alex needs a stand for her Christmas tree but isn't sure if this is the right one. Can you match the shape on the right to how it looks from above from the 4 options below?

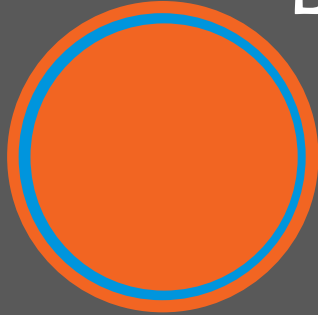
Let me know your answer using #STEMGlasgow



A



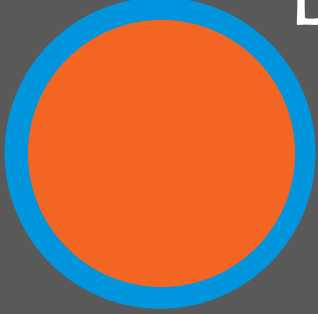
B



C



D



#STEMGlasgow



Hannah still has to buy Christmas presents but she can't remember how many she needs to get. The answer to the maths riddle below is the number of presents Hannah has to buy. Can you help her?

$$12 \times 12 = 9$$

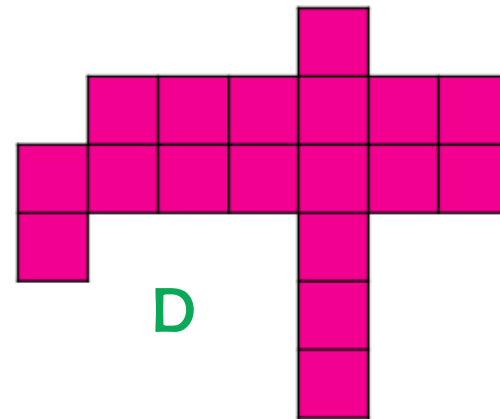
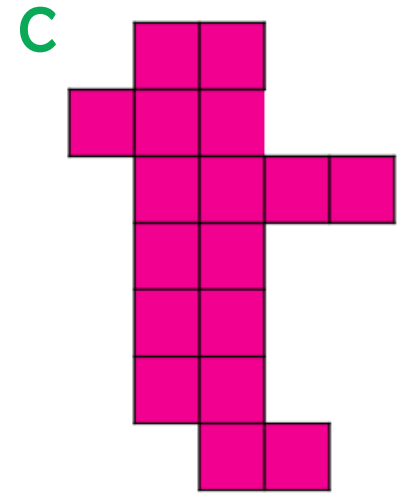
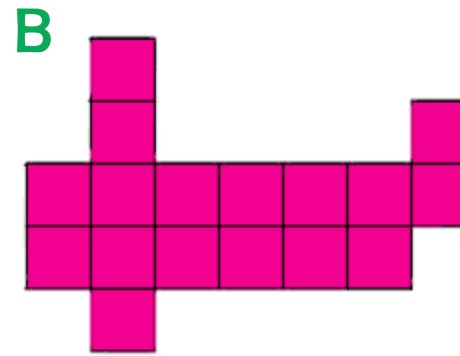
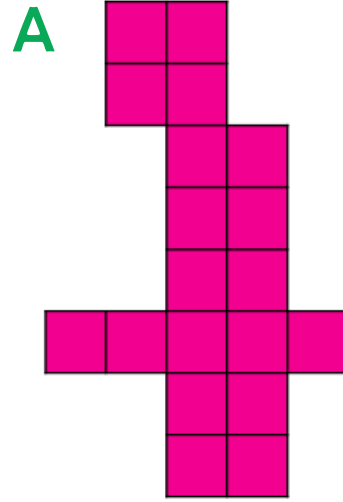
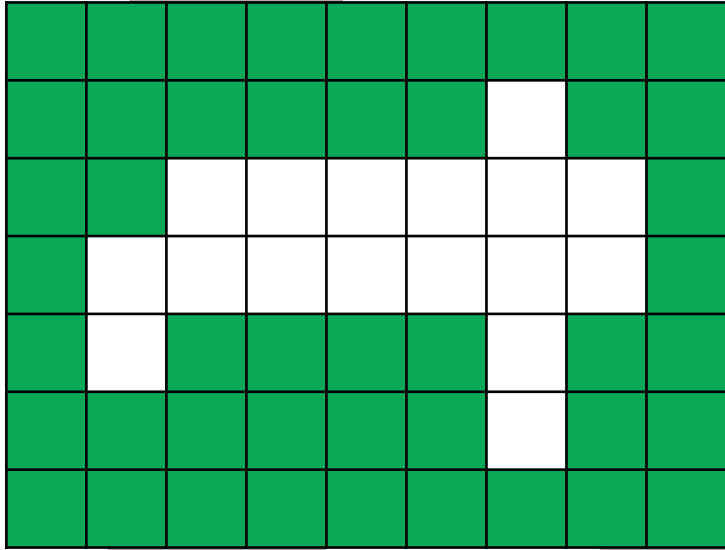
$$23 \times 23 = 16$$

$$34 \times 34 = ?$$

I know that you'll sleigh it!



Claire is doing a bit of Christmas wrapping tonight and wants to make sure she cuts enough paper to wrap her gift. Can you correctly identify the shape that fits into the grid on the left.



I can't get my head wrapped around this one!



















Can you help Alex solve the festive maths problem in the grid below? Tweet your answer using #STEMGlasgow

Each decoration stands for a number. The numbers shown are the totals of the four decorations in the row or column.

Can you help me find the remaining totals?



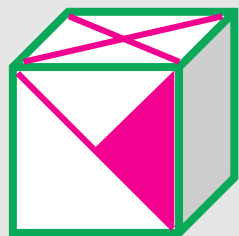
				40
				
				38
				
			52	

#STEMGlasgow

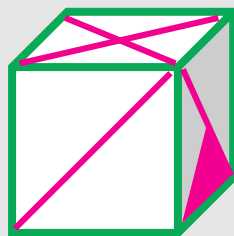


Claire has got to put a box together to put Christmas gifts in. After she has folded it can you match it to 2 of the assembled boxes below?

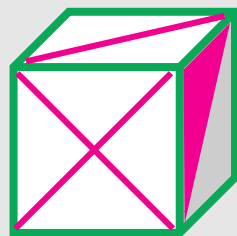
A



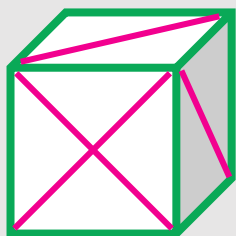
B



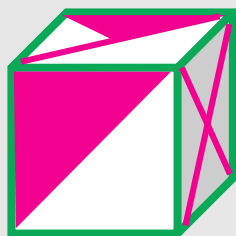
C



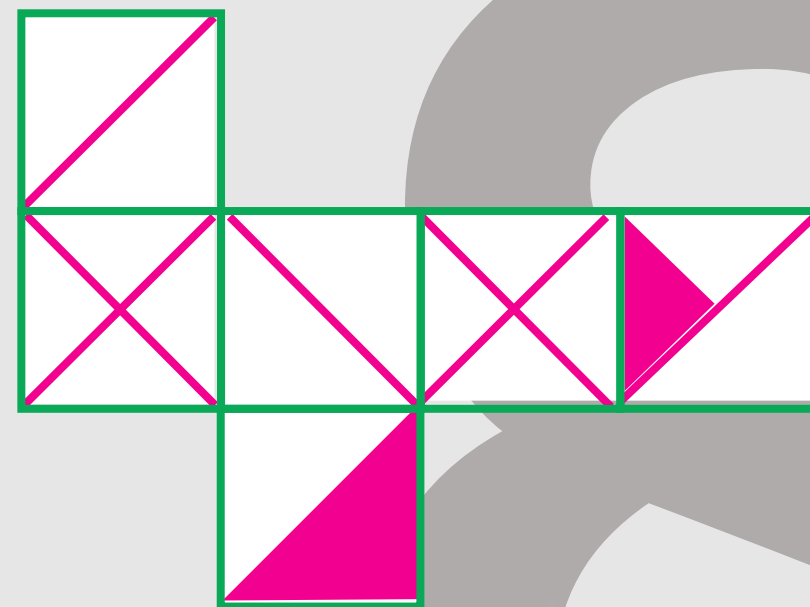
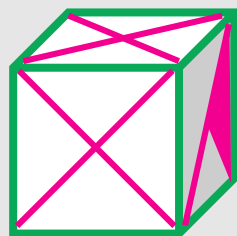
D



E



F



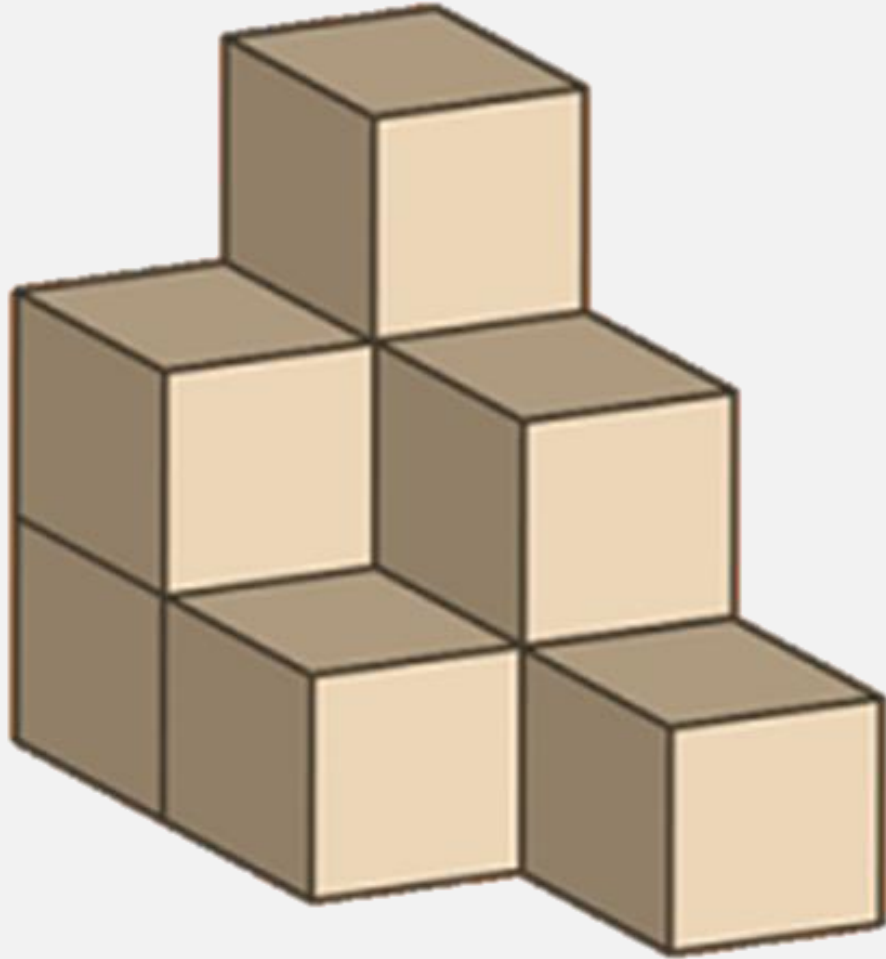
Tweet your answer using #STEMGlasgow



#STEMGlasgow



Hannah has ordered Christmas presents for the STEM Glasgow team. Look at the image of the stacked boxes below and work out how many she ordered.



Tweet your answer
using
#STEMGlasgow



#STEMGlasgow



Help Alex calculate the underlined numbers using the numbers in the tables below. Tweet your answer using #STEMGlasgow

262

4	1	7	10	2	50
---	---	---	----	---	----

377

6	10	6	9	7	5
---	----	---	---	---	---

487

25	50	100	75	5	6
----	----	-----	----	---	---

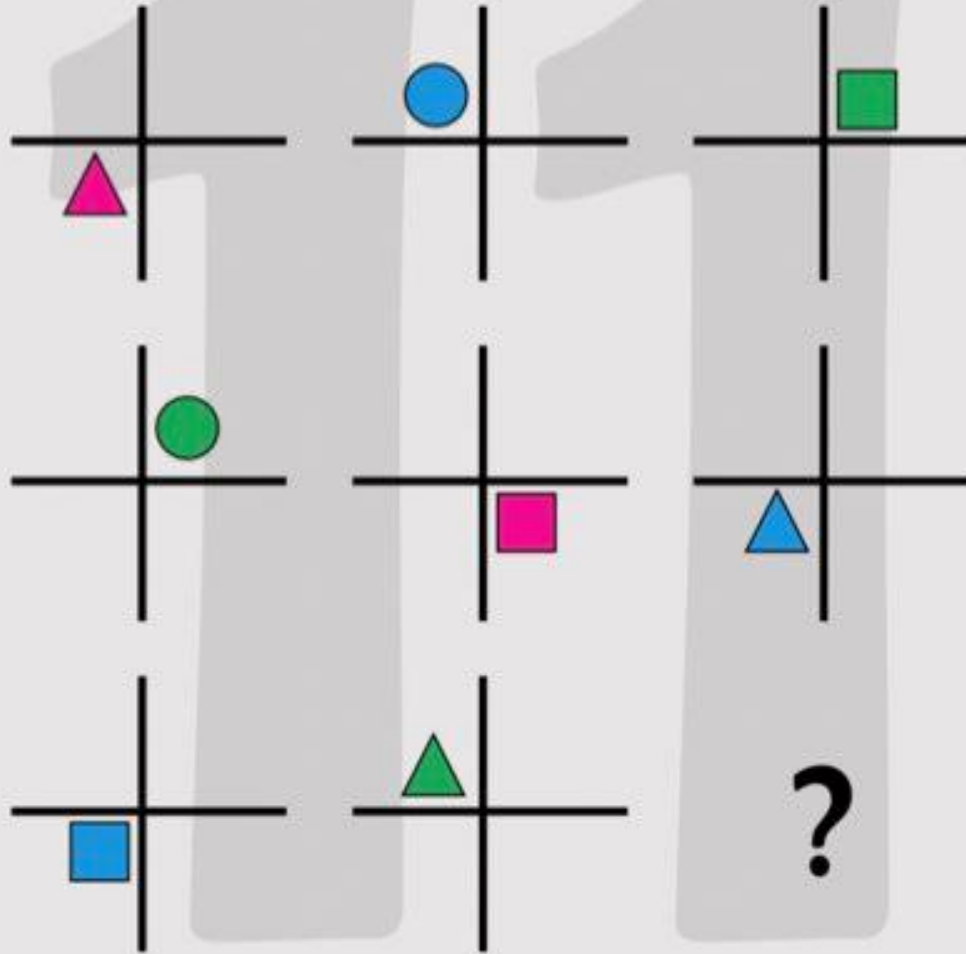
Remember, you don't have to use every number and some of these may have more than one solution.



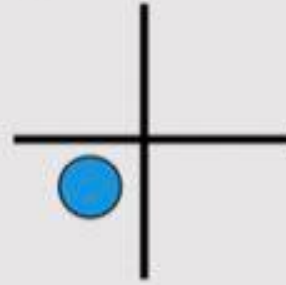
#STEMGlasgow



Can you help Claire work out what comes next? Choose from the 4 options below and tweet your answer using #STEMGlasgow



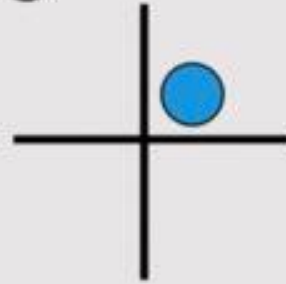
A



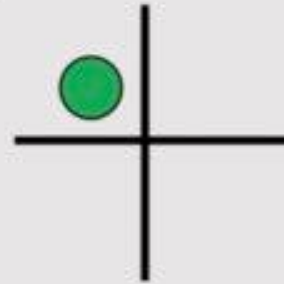
B



C



D



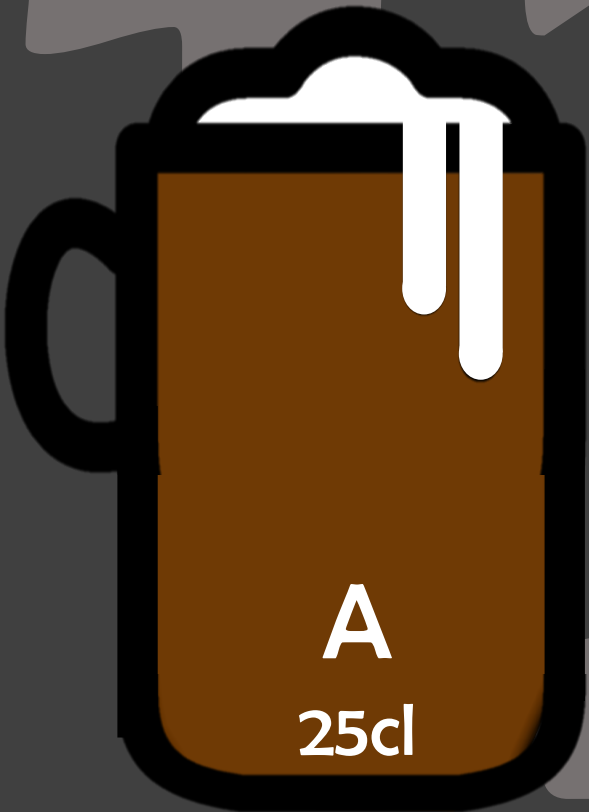
#STEMGlasgow



Hannah has bought hot chocolate for the STEM Glasgow team. Can you help her convert the volumes into millilitres, centiliters and litres?

Cup	Millilitres	Centilitres	Litres
A			
B			
C			

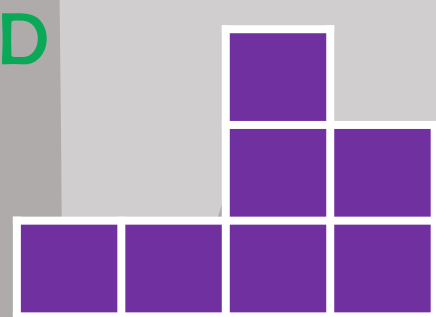
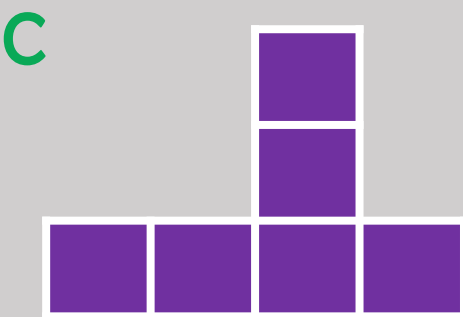
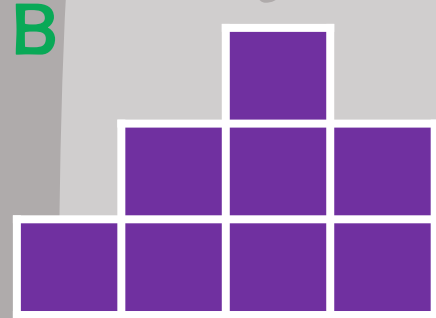
Tweet your answer using #STEMGlasgow



#STEMGlasgow



Can you help Alex identify which of the 2D shapes below match the 3D shape on the right. The arrow points to the face she is looking at.



Tweet your answer using #STEMGlasgow



#STEMGlasgow



Help Alex identify the pattern in each sequence and complete the missing squares.

1	2	4	8			
---	---	---	---	--	--	--

8	8	9	11	14				
---	---	---	----	----	--	--	--	--

5	9	17	29	45	65				
---	---	----	----	----	----	--	--	--	--

0.6	1.4	1.1	1.9	1.6	2.4					
-----	-----	-----	-----	-----	-----	--	--	--	--	--

-4	-6		-14		-32	-45		-81		
----	----	--	-----	--	-----	-----	--	-----	--	--

4	5	7	11	19								
---	---	---	----	----	--	--	--	--	--	--	--	--

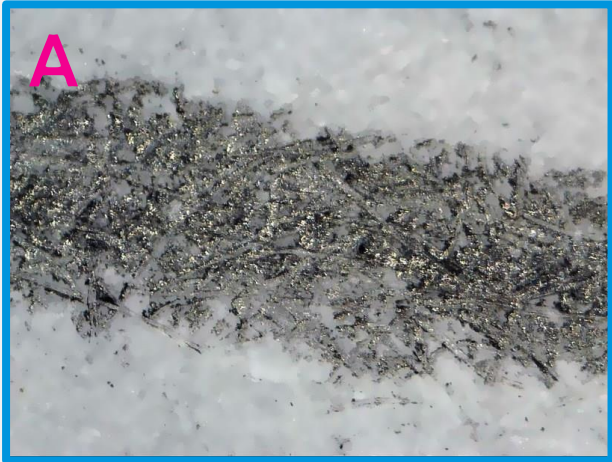
Tweet your answer using #STEMGlasgow



#STEMGlasgow



Can you help Hannah identify the magnified images below?



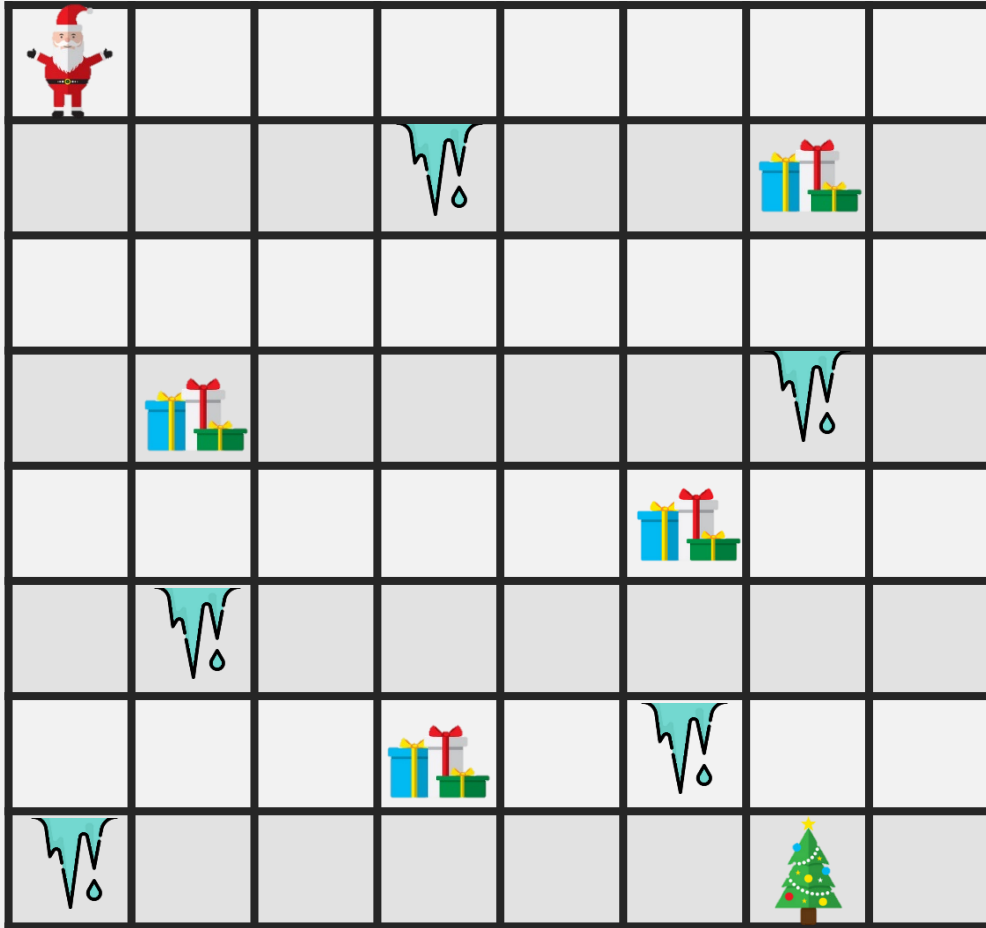
Tweet your answer
using
#STEMGlasgow



#STEMGlasgow



Can you help Claire programme Santa to collect all the gift and take them to the tree in as few moves as possible? How many moves does it take? Watch out for the ice!



We can use these moves:

- One box up
- One box down
- One box left
- One box right

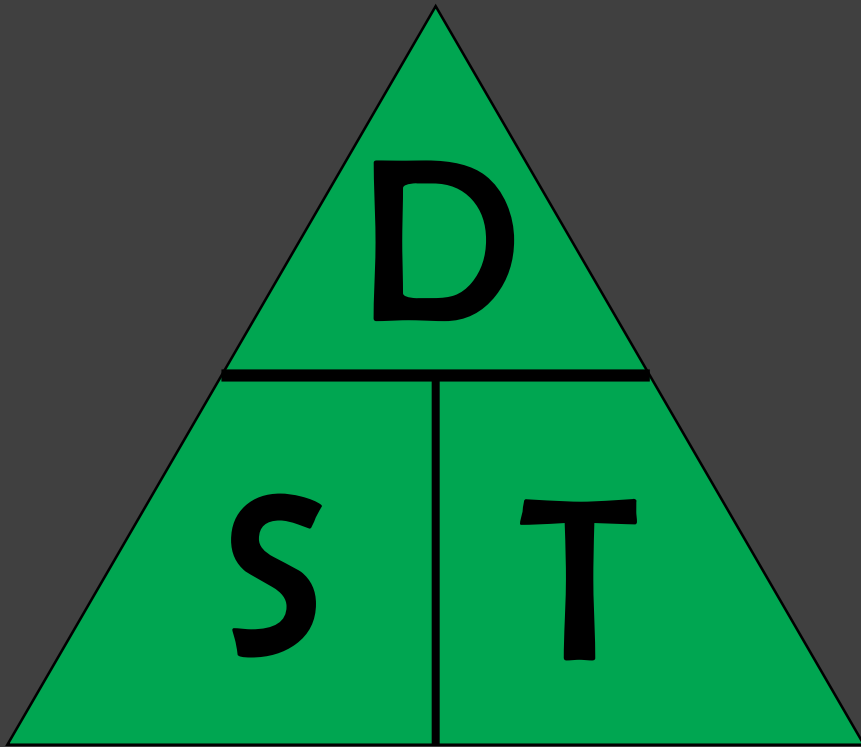
Tweet your answer using #STEMGlasgow



#STEMGlasgow



Help Alex sleigh this challenge and work out how far away the reindeer stable is from Santa Claus' house. Tweet your answer using #STEMGlasgow.



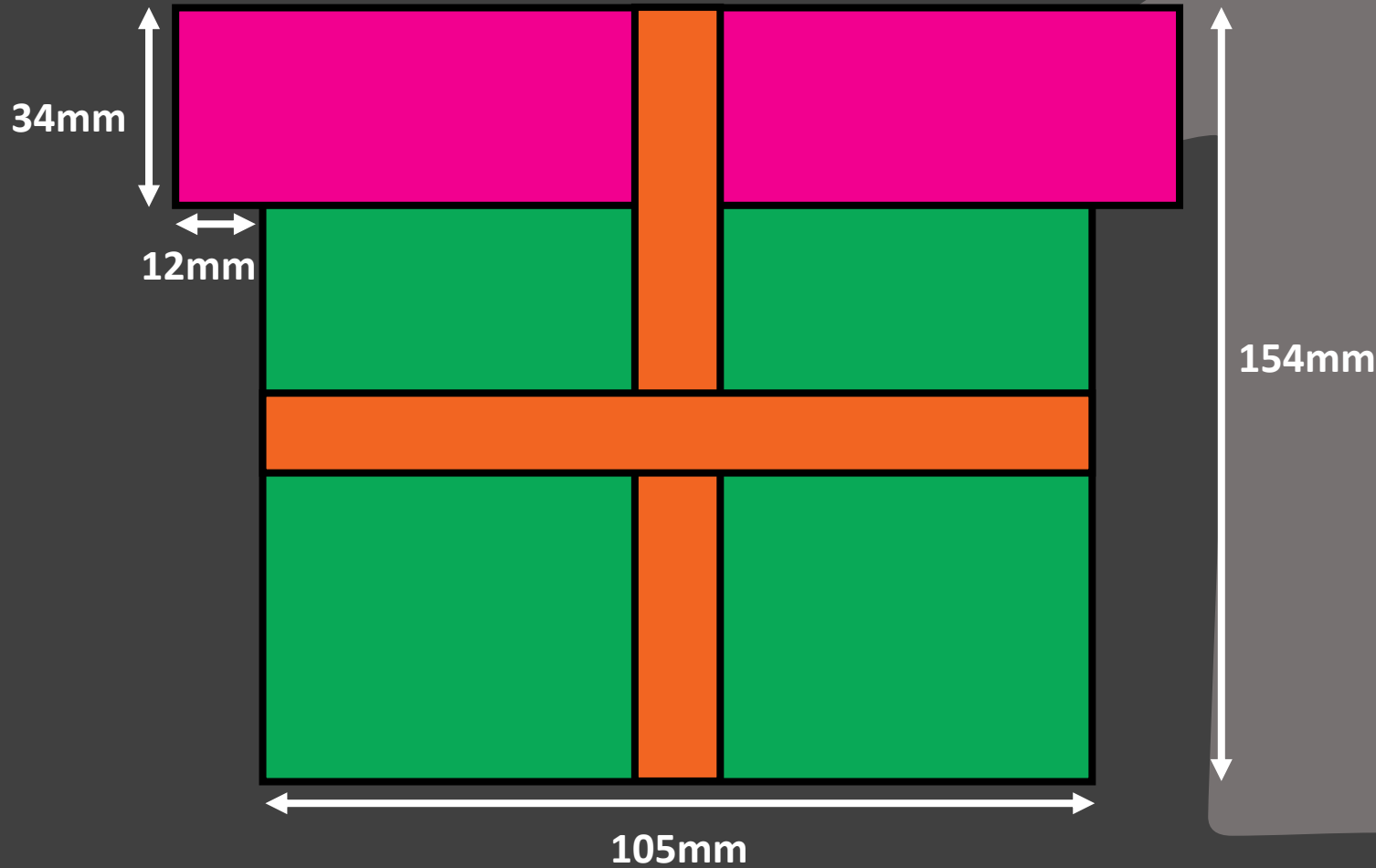
Santa needs to feed the reindeer tonight. It took him 45 minutes traveling at 32mph last night. How far away is the stable?



#STEMGlasgow



Hannah is packing her car to deliver presents to the STEM Glasgow team. She doesn't know if she has enough room. Can you help her work out the area of one of her presents? Tweet your answer using #STEMGlasgow.



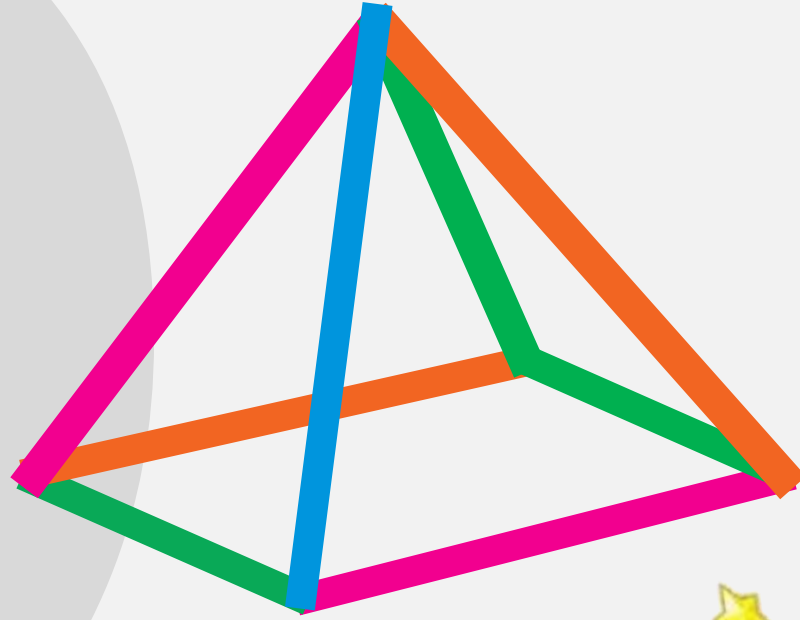
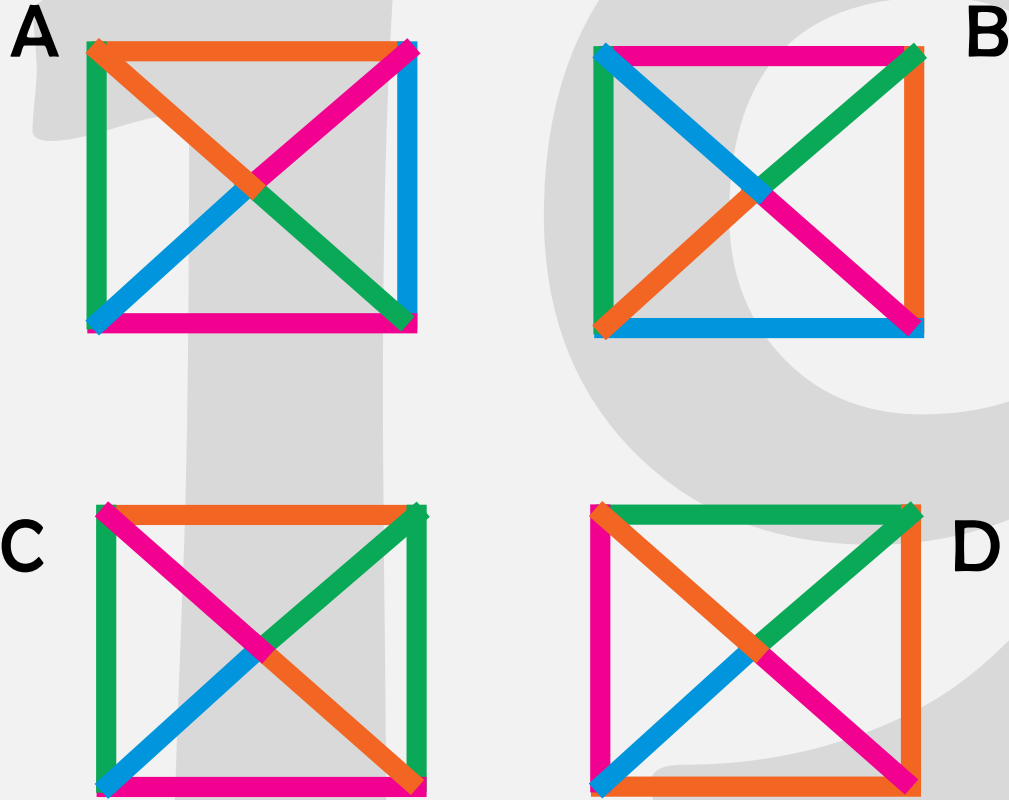
This one is giving me brain freeze. You find the area of a rectangle using $A=L \times B$.



#STEMGlasgow



Claire needs your help with today's challenge. Which of the options below is view from to the top of the pyramid?



Tweet your answer using #STEMGlasgow



#STEMGlasgow



Answers

Challenge 1

A. 56

Challenge 2

A. 1 – Norway/Sweden/Finland

2 – Japan

3 – Argentina

4 – United Kingdom

5 – USA/Canada

6 – Italy

Challenge 3

A. 3

Challenge 4

A. A

Challenge 5

$$12 \times 12 = 144 \quad 1 + 4 + 4 = \underline{9}$$

$$12 \times 12 = 9$$

$$23 \times 23 = 529 \quad 5 + 2 + 9 = \underline{16}$$

$$23 \times 23 = 16$$

$$A. 34 \times 34 = 1156 \quad 1 + 1 + 5 + 5 = \underline{13}$$

$$\underline{34 \times 34 = 16}$$

Challenge 6

A. B

Challenge 7

A. Wreath = 13

Present = 7

Bauble = 9

Challenge 8

A. B and D

Challenge 9

A. 9

Challenge 10

$$A. 4 \times 50 = 200$$

$$6 \times 10 = 60$$

$$60 + 2 + 200 = \underline{262}$$

$$(6 \times 5) + (6 + 7) = 43$$

$$43 \times 9 = 387 - 10$$

$$= \underline{377}$$

$$50/25 = 2$$

$$2 \times 6 = 12$$

$$(75 \times 5) = 375 + 100 = 475$$

$$475 + 12 = \underline{487}$$



Answers

Challenge 11

A. *B*

Challenge 12

A.

	<i>ml</i>	<i>cl</i>	<i>L</i>
<i>A</i>	<i>250ml</i>	<i>25cl</i>	<i>0.25L</i>
<i>B</i>	<i>180ml</i>	<i>18cl</i>	<i>0.18L</i>
<i>C</i>	<i>75ml</i>	<i>7.5cl</i>	<i>0.075L</i>

Challenge 13

A. *D*

Challenge 14

A.

16	32	64	
18	23	29	36

89	117	149	185
----	-----	-----	-----

2.1	2.9	2.6	3.4	3.1
-----	-----	-----	-----	-----

-9	-21	-62	-104	-133	-164
----	-----	-----	------	------	------

35	67	131	259	515	1026	2051	4099
----	----	-----	-----	-----	------	------	------

Challenge 15

- A. *Pencil on paper*
Book Page
Finger Print
Grain of Sugar
Tea Bag
Pepper Seeds

Challenge 16

A. 13 moves

Challenge 17

A. *24 miles*

Challenge 18

A. *169.89m²*

Challenge 19

A. *C*

