

Winter Maths

Challenge Cards



Winter Maths

1. Here are the daytime temperatures for a week in December 2009 which was called 'The Big Freeze':

Mon	Tues	Wed	Thurs	Fri	Sat	Sun
1°C	0°C	-3°C	-11°C	-14°C	-12°C	-5°C

What is the difference between the temperatures on Monday and on Friday?

What is the difference between the temperatures on Sunday and Friday?



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2. Here are the overnight temperatures for one week in December:

Mon	Tues	Wed	Thurs	Fri	Sat	Sun
-17°C	-22°C	-21°C	-18°C	-14°C	-7°C	2°C

What is the difference between the temperatures on Tuesday and Saturday?

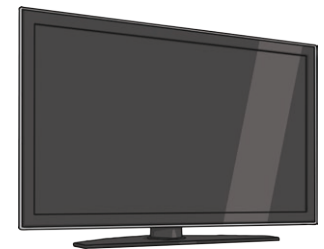
What is the difference between the temperatures on Sunday and Friday?



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3. During December, Daniel watches a lot of old TV programmes, but notices that at the end, many of them have Roman numerals instead of the year as he would recognise it:

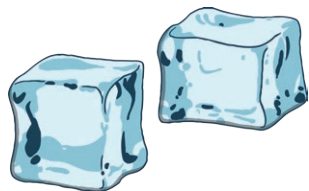
- a. MCMXCV d. MM
 b. MMIX, e. MCMLXXXVIII,
 c. MCMLXX f. MCMLXXVII



Work out the year for each of these Roman numerals.

Winter Maths

4. Jane has some large ice cubes, which she is measuring. They measure 38mm along one side of the cube.



- a. What is this measurement in cm?
- b. If she lines up ten ice cubes, what will the length of the line be in mm and cm?
- c. Jane then lets one ice cube melt. She ends up with 55ml of water how much water in litres would she have from 100 ice cubes?

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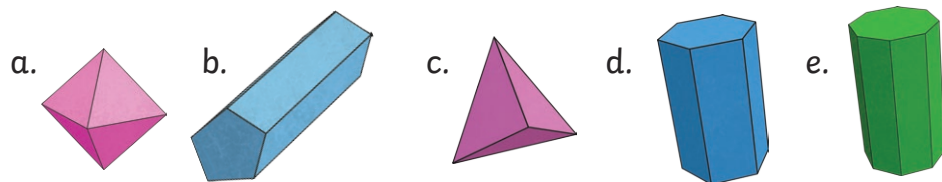
5. Joe needs to do these things today before he goes out. What time will he have to start to be done for 12pm noon?

Job	Time
Have breakfast	20 minutes
Have a shower	15 minutes
Check emails	25 minutes
Homework	1 hour
Watch TV programme	35 minutes
Practise Guitar	25 minutes

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6. Jane makes some different shaped ice cubes by putting water in different containers and leaving them outside in the overnight frost. What are the names of the 3D shapes she has made?



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7. Sarah has £40 to spend on Christmas presents. She buys the following list. Find the total cost of the gifts and how much change she has left.

Wash bag £7.50

CD £6.00

Shirt £14.50

Socks £2.50

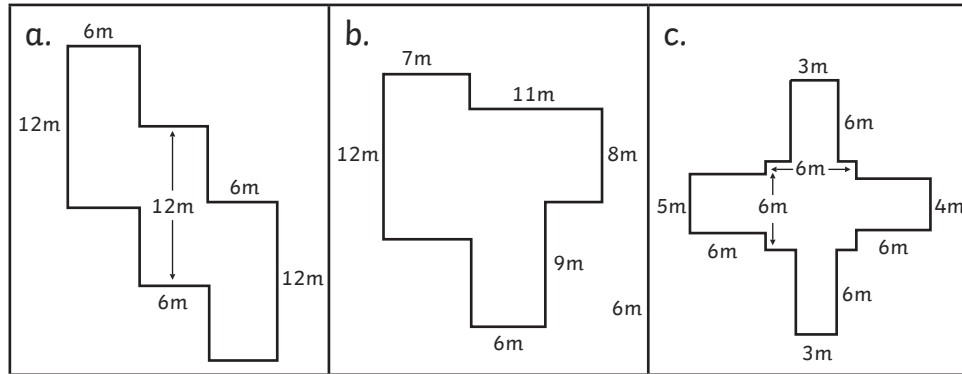
Stationery set £7.75



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8. A farmer wants to start a Christmas tree farm and is looking at an area to fence off for planting trees. Work out the area of each of these designs so he can work out which works out the best cost.



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9. The local theatre is staging a winter Panto.

On the ground floor, the theatre has 24 rows of seat with 32 seats in each row.

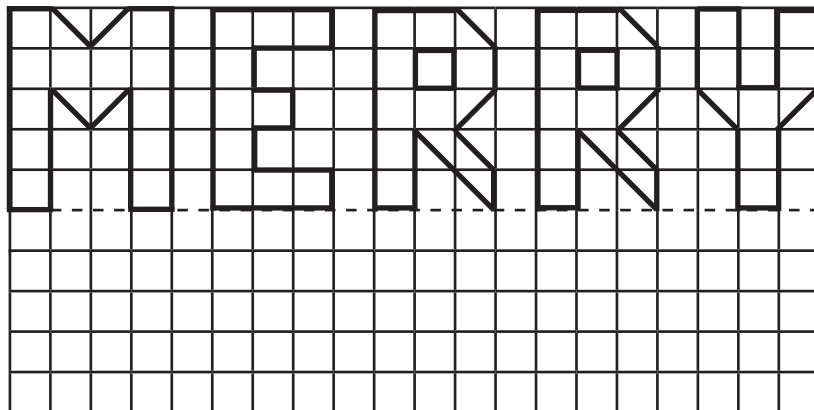
The balcony has 12 rows, with 56 seats in each row.

- a. How many seats are on the ground floor?
b. How many seats are on the balcony?



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10. Jake notices that the trees are reflecting in the water on his winter walk. Copy and reflect this festive word in the horizontal mirror line.



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11. In the local pantomime, adult tickets are £18.50 and children's tickets are £11.50.

- a. How much does it cost to buy 10 adult tickets and 10 children's tickets?
b. How much money does the theatre take if it sells 100 adult tickets and 100 children's tickets?



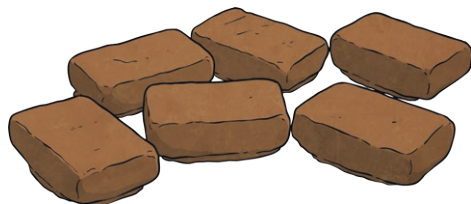
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12. Think of an advent calendar that goes up to Christmas Day and list the following numbers:

a. All the prime numbers

b. All the square numbers

c. All the cube numbers



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13. 4 bakeries in the town had 200 mince pies to sell the weekend before Christmas. Here's the fraction of what was sold in each shop half-way through the weekend:

Shop	Fraction Sold
The Bun Guys	$\frac{3}{4}$
Great British Bake Off	$\frac{5}{8}$
Bun Boy Three	$\frac{1}{2}$
Rise and Shine	$\frac{7}{8}$

Put the shops in order by the amount of mince pies they had sold from least to most.

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14. Dave had baked a Christmas cake. Geoff's share was $\frac{1}{4}$ of the cake and Tom's share was $\frac{1}{2}$ of the cake.

Dave baked a second cake; Susan had $\frac{4}{10}$, Sharon had $\frac{2}{10}$ and Norman had $\frac{1}{10}$.

For each cake, write as a decimal, the amount of cake that Dave had left.

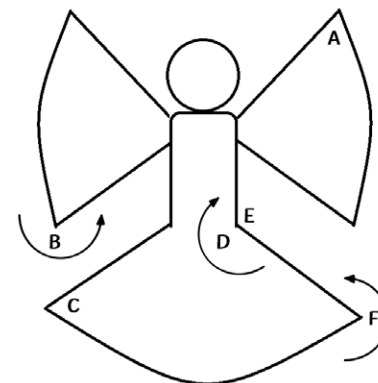


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15. Sally makes a snow angel in the snow. For each letter, decide whether the angle is acute, obtuse or reflex.

Also, what should D and E add up to?



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