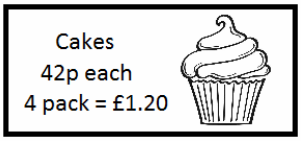
9-1 GCSE Foundation Thinking Questions – www.m4ths.com

(1) Janet buys **2** bags of crisps for 60p each and **one** can of drink for 73p. She pays with a £5 note. She receives **exactly** 4 coins in her change. What coins did she receive?

(2) Peter needs to buy a cake for each of the 15 people in his office. He sees the advert below.



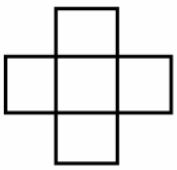
Find the cheapest possible way of buying enough cakes for the people in Peter's office.

(3) Kevin lives a 5 minute walk from the bus station in Kings Lynn. Kevin has agreed to meet his friend at Guyhirn at 3:15pm. What is the latest time Kevin can leave home to ensure he meets his friend on time?

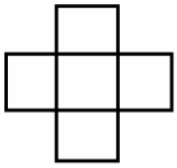
Kings Lynn,Bus Station	0750	0850	0950	1050	1150	1250	1350	1450	1550	1650
Terrington St John,Bus Shelter	0805	0905	1005	1105	1205	1305	1405	1505	1605	1705
Walton Highway,Highwayman	0810	0910	1010	1110	1210	1310	1410	1510	1610	1710
Wisbech,Bus Station	0822	0922	1022	1122	1222	1322	1422	1522	1622	1722
Guyhirn	0832	0932	1032	1132	1232	1332	1432	1532	1632	1732
Thorney,opp.Fish and Chip Shop	0843	0943	1043	1143	1243	1343	1443	1543	1643	1743
Peterborough, Bus Station	0901	1001	1101	1201	1301	1401	1501	1601	1701	1801

(4) (a) Fill each of the 5 squares below with a **different** number. The numbers in the column **and** the row must **add** to give the same amount. *You have a practice grid to use first if you need it.*

Practice

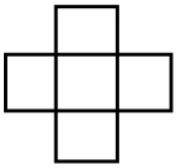


Final Answer

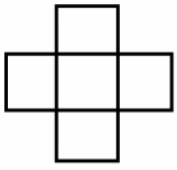


(b) Fill each of the 5 squares below with a **different** number. The **sum** of the numbers in the column must be **TWICE** the sum of the numbers in the row.

Practice



Final Answer



(5) The distance chart below shows the distance in miles between 5 different towns.

Town A

12	Town B				
23	16	Town C			
42	32	11	Town D		
18	49		6	Town E	
24	26	15	13	21	Town F

(a) The distance from Town C to Town E is 31 miles. Complete the chart using this information.
(b) Fred Drives from Town B to **one** of the other towns **via** Town D. Given that his total journey is 45 miles, find the town Fred drives to.

(6) (a) Complete the table below. The first number in each box is given.

The first 10 prime numbers are:	**The first 10 square numbers are:**	**The first 5 cube numbers are:**
2	$1 \times 1 =$ **1**	$1 \times 1 \times 1 =$ **1**

(b) Find one **prime** number and one **square** number the have a **difference** of at least 10.
(c) Explain why 9 doesn't appear in the first box but does appear in the second.
(d) Find two prime numbers that **sum** to give a cube number.
(e) The **product** of 2 prime numbers is 35. What are the two prime numbers?

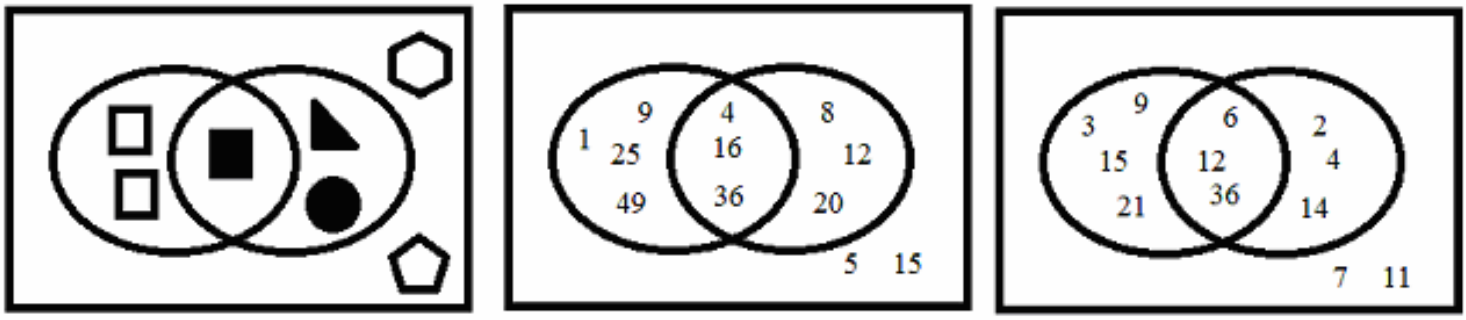
(7) There are **less** than 10 counters in a bag. The counters are either blue or red. **One blue** counter is taken out. The ratio of blue counters to red counters is **now** 2:1. What is the **maximum** number of blue counters that could have been in the bag to start with?

(8) Sally has 4 coins in her pocket. The total amount in her pocket is £1.26. She takes one coin out and replaces it with a 10p. What is the minimum amount she can now have in her pocket?

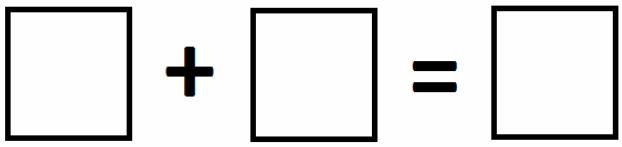
(9) Find the only **integer** that satisfies **ALL** of the inequalities below:

$-1 < x \leq 3$ $\quad$ $y > -2$ $\quad$ $2 < z \leq 9$

(10) Label the Venn Diagrams below to show the sets represented in each diagram.



(11) Write one prime number, one square number and one cube number in the boxes below to make the calculation correct.



(12) Find the values of A, B and C.

$A = 2D + 1$	$B = C - 5$	$C = A \div 3$	$D = 4$

(13) The **area** of the square **and** triangle below are equal. Find possible values of x and y