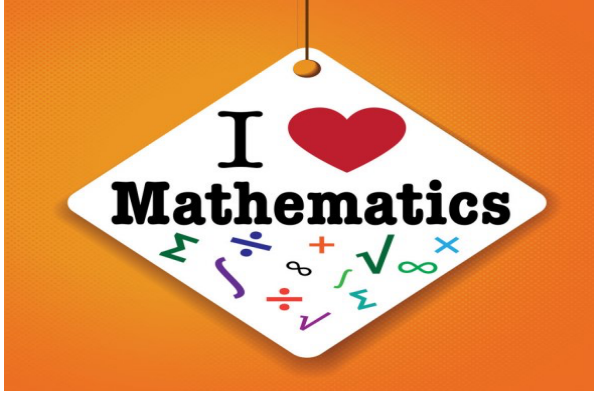


Monday 9th November

Common Factors

Watch the video link and answer the following questions

https://vimeo.com/464241360

Common factors

1 **a)** Use 18 counters or cubes.

Make as many different arrays as possible, using all the cubes or counters.

Use your arrays to help you list the factors of 18

The factors of 18 are _____

_____

b) Use 24 counters or cubes.

Make as many different arrays as possible, using all the cubes or counters.

Use your arrays to help you list the factors of 24

The factors of 24 are _____

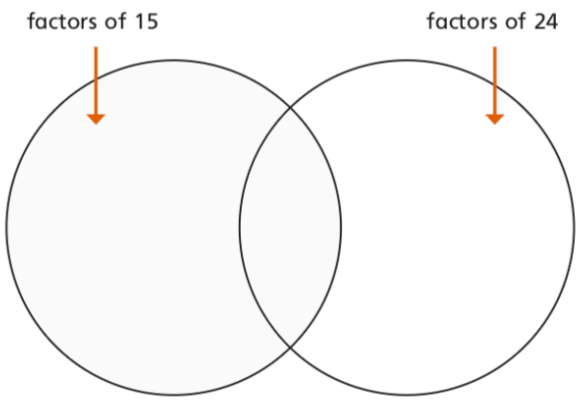
_____

c) What are the common factors of 18 and 24?

_____

2 Write the numbers in the sorting diagram.

1 2 3 4 5 6 8 12 15 24



Complete the sentence.

The common factors of 15 and 24 are _____

3 Find the common factors of each pair of numbers.

a) 12 and 20

_____

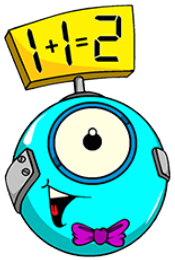
b) 16 and 25

_____

c) 20 and 50

_____

d) 20 and 60



CHALLENGE QUESTIONS

4 **a)** Complete the table.

Factor pairs of 50	Factor pairs of 75	Factor pairs of 100
1 × 50 2 × 25 5 × 10	1 ×	

b) What are the common factors of 50, 75 and 100?

_____

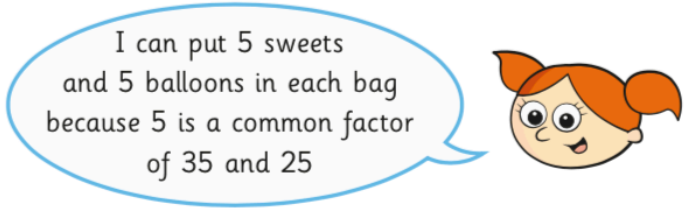
5 List 3 common factors of 360 and 180 that are greater than 50

_____

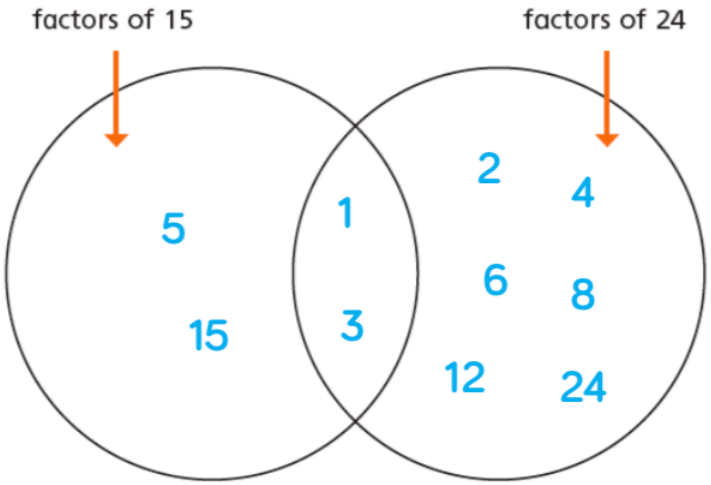
6 Alex is making party bags.

She has 35 sweets and 25 balloons.

The sweets and balloons need to be shared equally, so that each bag has the same number of sweets and balloons.



Is Alex correct? _____

Question	Answer
1	a) 1, 2, 3, 6, 9, 18 b) 1, 2, 3, 4, 6, 8, 12, 24 c) 1, 2, 3, 6
2	
3	a) 1, 2, 4 b) 1 c) 1, 2, 5, 10 d) 1, 2, 4, 5, 10, 20

4

Factor pairs of 50	Factor pairs of 75	Factor pairs of 100
1 × 50 2 × 25 5 × 10	1 × 75 3 × 25 5 × 15	1 × 100 2 × 50 4 × 25 5 × 20 10 × 10

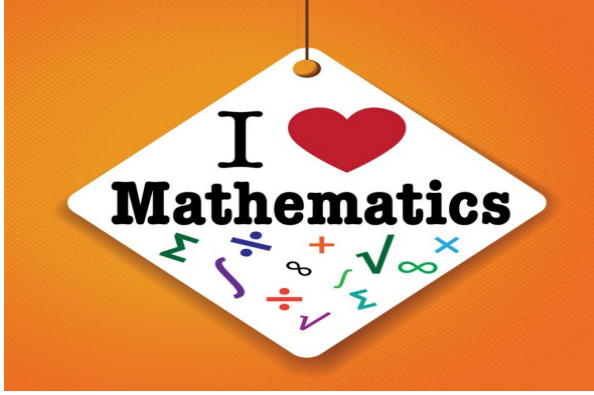
b) 1, 5, 25

5

60, 90, 180

6

No.
If she puts 5 sweets and 5 balloons in each bag, she will make 5 bogs, but she will have 10 sweets left over.
She can make 5 bags, with 7 sweets and 5 balloons in each bag.



Tuesday 10th November

Common Multiples

Watch the video link and answer the following questions

https://vimeo.com/465048249

Common multiples

1 Shade all the multiples of 9

Circle all the multiples of 6

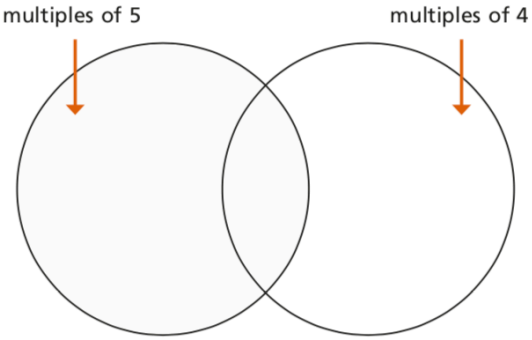
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

List any common multiples of 9 and 6

_____

2 **a)** Write the numbers in the sorting diagram.

25 30 16 20 24 60 75 40



b) Write all the common multiples of 4 and 5 from the list.

_____

c) Look at the common multiples of 4 and 5 from part b).

What do you notice?

Describe how to find more common multiples to add to this list.

Would you ever run out of common multiples?

3 **a)** Continue the lists of multiples.

Multiples of 5

5, 10, 15, ☐, ☐, ☐, ☐, ☐, ☐,

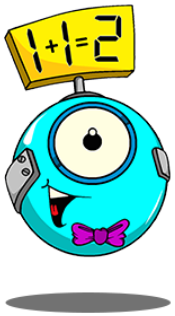
☐, ☐, ☐, ☐, ☐

Multiples of 7

7, 14, 21, ☐, ☐, ☐, ☐, ☐, ☐,

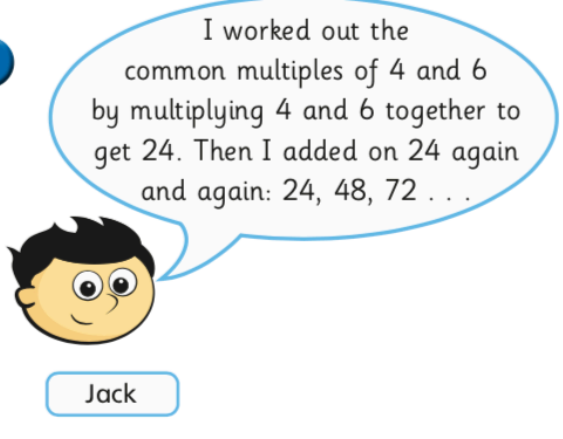
☐, ☐, ☐, ☐, ☐

b) Circle the common multiples of 5 and 7



CHALLENGE QUESTIONS

4



Who do you agree with and why?

_____

_____

_____

5 Write the first five common multiples of these numbers.

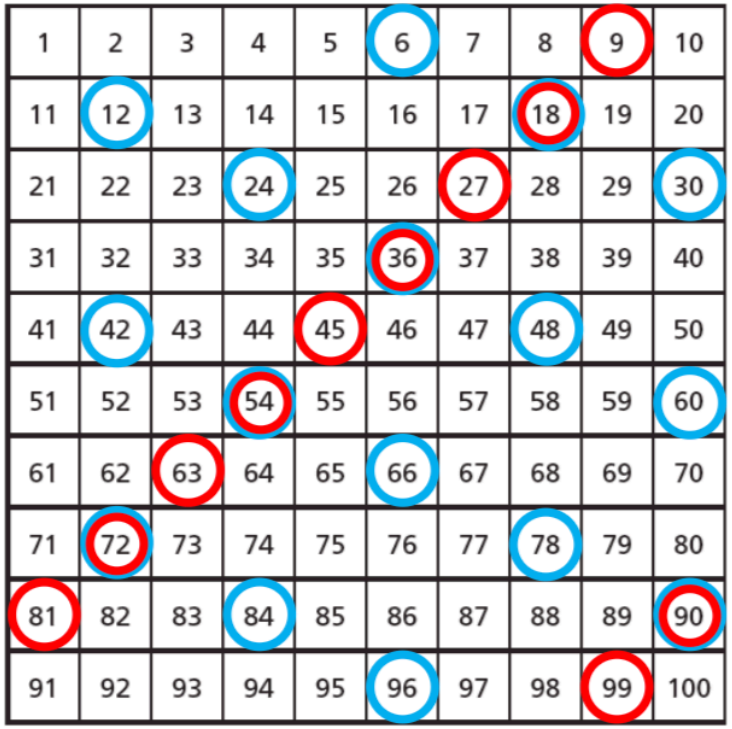
a) 2 and 3

_____

b) 3 and 12

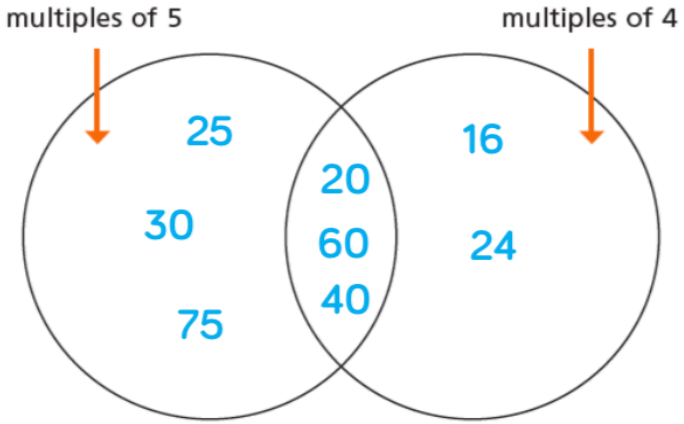
_____

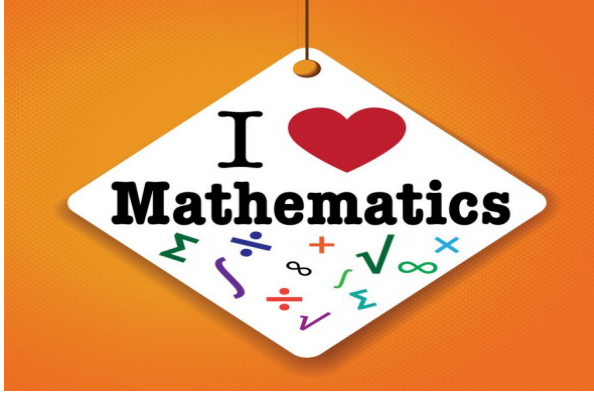
c) 15 and 10

Question	Answer
1	

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

18, 36, 54, 72, 90

2	 b) 20, 40, 60 c) They are all multiples of $4 \times 5 = 20$ Any multiple of 20 is a common multiple of 4 and 5 No, we will never run out of common multiples.
3	Multiples of 5: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70 Multiples of 7: 7, 14, 21, 28, 35, 42, 49, 56, 63, 70, 77, 84, 91, 98
4	Jack's method will find common multiple, but Rosie is also correct that he will miss some. 12, 36, 60, ... are also multiples of 4 and 6 All multiples of 12 are multiples of 4 and 6
5	a) 6, 12, 18, 24, 30 b) 12, 24, 36, 48, 60 c) 30, 60, 90, 120, 150



Wednesday 11th November

Primes to 100

Watch the video link and answer the following questions

https://vimeo.com/465049678

Primes to 100

1 **a)** Find the factors of these numbers.

6 8 9

The factors of 6 are _____.

The factors of 8 are _____.

The factors of 9 are _____.

b) Find the factors of these numbers.

3 5 7

The factors of 3 are _____.

The factors of 5 are _____.

The factors of 7 are _____.

c) What is the same and what is different about your answers to part a) and part b)?

_____

_____

Complete the sentence.

All the numbers in part b) are _____ numbers.

2 How can you prove that 18 is not a prime number?

3 Circle the prime numbers in each list.

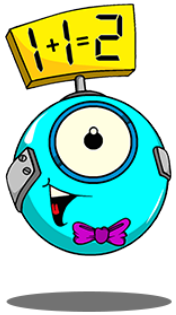
a) 1 2 3 4 5 6 7

b) 17 22 9 36 21 35 23

c) 10 18 38 74 92 2 14

4 **a)** Many people think that 1 is a prime number.
Explain why 1 is not a prime number.

b) Many people think that 2 is not a prime number.
Explain why people might think this.



CHALLENGE
QUESTIONS

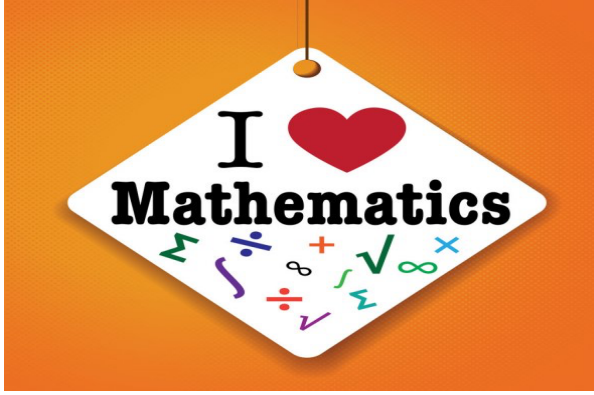
5 Write ten numbers in the sorting diagram. Each section must have at least one number.

	Even	Not even
Prime		
Not prime		

Question	Answer
1	a) The factors of 6 are 1, 2, 3, 6 The factors of 8 are 1, 2, 4, 8 The factors of 9 are 1, 3, 9 b) The factors of 3 are 1, 3 The factors of 5 are 1, 5 The factors of 7 are 1, 7 c) All the numbers in both part a) and part b) have 1 and the number as factors. In part a) there are also other factors, but in part b) these are the only factors. All the numbers in part b) are **prime** numbers.
2	$18 = 1 \times 18$ $18 = 2 \times 9$ $18 = 3 \times 6$ 18 has 6 factors so it is not prime.
3	a) 1 (2) (3) 4 (5) 6 (7) b) (17) 22 9 36 21 35 (23) c) 10 18 38 74 92 (2) 14
4	a) An integer has exactly two factors, 1 and the number. 1 only has one factor (1) so is not prime. b) Many people think that no even numbers can be prime, since they are all a multiple of 2. But the only factors of 2 are 1 and zero, so 2 is prime.

5

	Even	Not even
Prime	2	multiple possible answers, e.g. 3, 11, 19
Not prime	multiple possible answers, e.g. 6, 10, 12	multiple possible answers, e.g. 9, 21, 25



Thursday 12th November

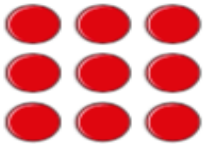
Squares and cubes

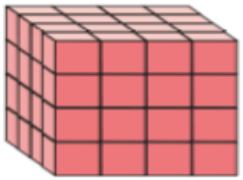
Watch the video link and answer the following questions

https://vimeo.com/465336467

Square and cube numbers

2 Match the representations.





4^2

4 cubed

3 squared

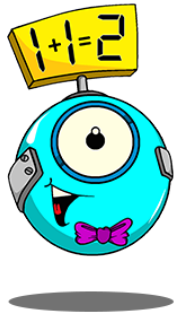
4 × 4

2^3

3 Here is a 2 × 2 × 2 cube. 

How many cubes do you need to build a 3 × 3 × 3 cube?

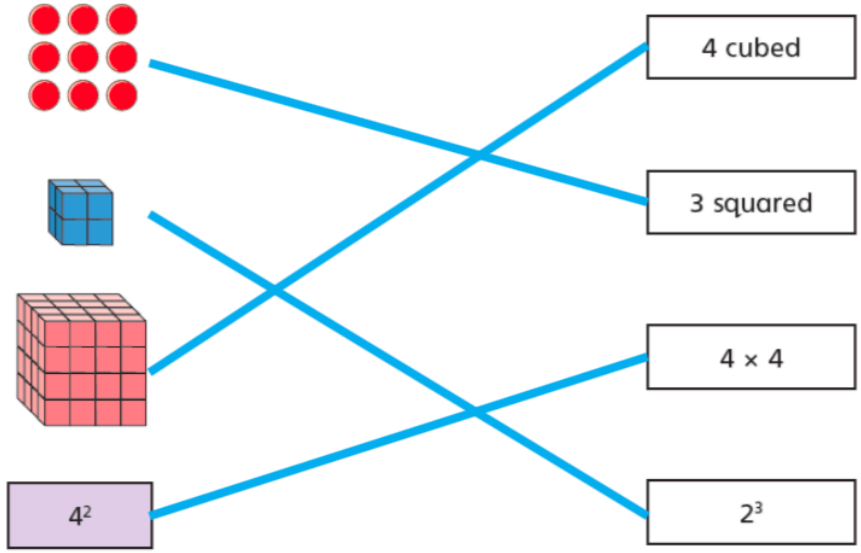
CHALLENGE QUESTIONS



4 Complete the table.

2^2	2×2	4
2^3	$2 \times 2 \times 2$	
3^2		
3^3		
$\square^2$		25
	$5 \times 5 \times 5$	

2

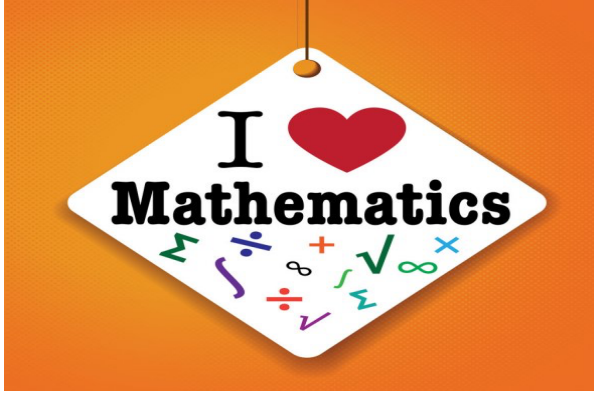


3

27

4

2^2	2 × 2	4
2^3	2 × 2 × 2	8
3^2	3 × 3	9
3^3	3 × 3 × 3	27
5^2	5 × 5	25
3^3	5 × 5 × 5	125



Friday 13th November

Order of operations

Watch the video link and answer the following questions

https://vimeo.com/465421787

Order of operations

1 Represent each calculation. Draw your answers.

a) $(3 + 2) \times 3$

b) $3 + (2 \times 3)$

c) $2 + 3 \times 3$

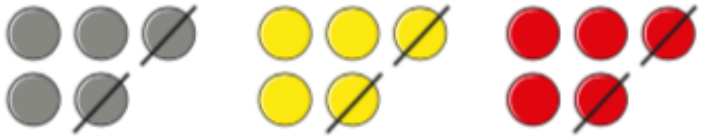
d) $3 \times (2 \times 3)$

2 Complete the calculations.

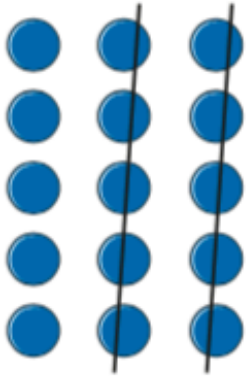
a) $(3 + \square) \times 2$

b) $\square + 2 \times \square$

c) $(\square - \square) \times 3$

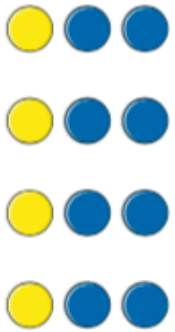


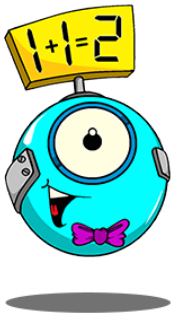
d) $15 - (\square \times \square)$



3 Draw a representation to match each calculation.

One has been done for you.

$4 \times (1 + 2)$ 	$4 \times 2 + 1$
$(10 - 3) \times 2$	$10 - 3 \times 2$



CHALLENGE QUESTIONS

4 Insert brackets to make the calculations correct.

$5 + 5 \times 5 = 50$	$100 - 100 \div 10 = 0$
$75 = 20 + 5 \times 1\frac{1}{2} + 1\frac{1}{2}$	$10 - 10 \times 10 = 50 + 50 - 100$

5 Insert operations and brackets to make as many different numbers as you can.

One has been done for you.

$(4 + 4) \times 4 = 32$ $\quad 3\ 3\ 3\ 3 = \square$

$4\ 4\ 4 = \square$ $\quad 3\ 3\ 3\ 3 = \square$

$4\ 4\ 4 = \square$ $\quad 3\ 3\ 3\ 3 = \square$

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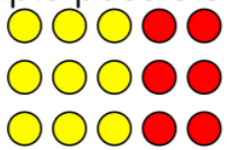
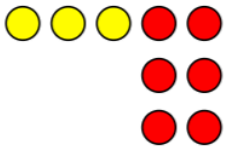
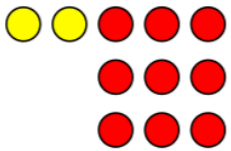
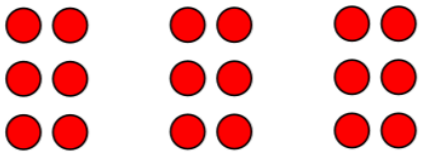
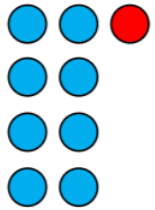
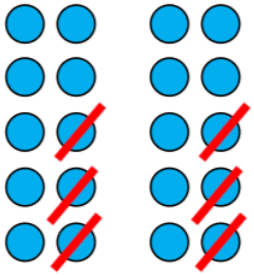
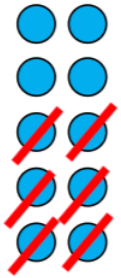
$4\ 4\ 4 = \square$ $\quad 3\ 3\ 3\ 3 = \square$

Question	Answer
1	multiple possible answers, e.g.: a)  b)  c)  d) 
2	a) $(3 + 2) \times 2$ b) $5 + 2 \times 4$ c) $(5 - 2) \times 3$ d) $15 - (2 \times 5)$

3

$4 \times (1 + 2)$ 	$4 \times 2 + 1$ 
$(10 - 3) \times 2$ 	$10 - 3 \times 2$ 

4

$(5 + 5) \times 5 = 50$	$(100 - 100) \div 10 = 0$
$75 = (20 + 5) \times (1\frac{1}{2} + 1\frac{1}{2})$	$(10 - 10) \times 10 = 50 + 50 - 100$

5

multiple possible answers, depending on operations and brackets