17.06.20

LO: To consolidate my knowledge of common factors and common multiples

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
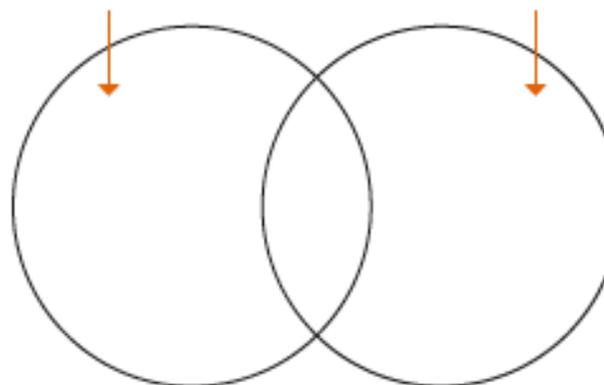
The factors of 24 are _____

_____

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

    factors of 15   factors of 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

_____

4 a) Complete the table.

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

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.

I can put 5 sweets and 5 balloons in each bag because 5 is a common factor of 35 and 25

Is Alex correct? _____

Explain your answer.

_____

_____

7

Annie: I am thinking of a 2-digit number.

Dexter: My number has a factor of 7 in common with Annie's number.

Ron: The common factors of my number and Annie's number are 1, 5 and 10

What number is Annie thinking of?

_____

8 Whitney is trying to simplify these fractions.

$\dfrac{18}{46}$ $\dfrac{24}{81}$ $\dfrac{40}{100}$

$\dfrac{121}{132}$

I can use common factors to work out how to simplify these fractions.

Show how Whitney's method could work.

factors

1 Colour 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

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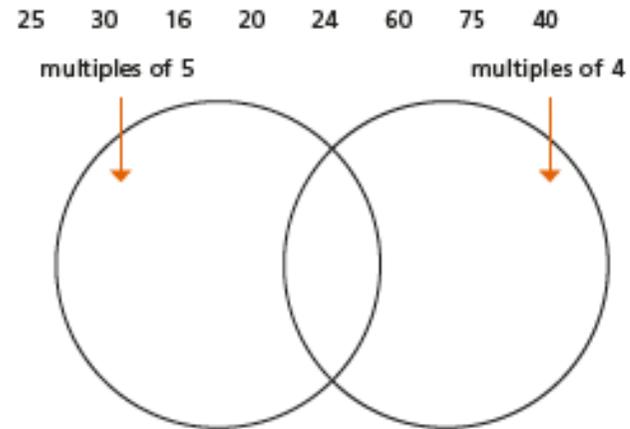
b) Write all the common multiples of 4 and 5 from the list.

_____

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, ☐, ☐, ☐, ☐, ☐, ☐,
☐, ☐, ☐, ☐, ☐

multiples

b) Circle the common multiples of 5 and 7

4

Jack: I worked out the common multiples of 4 and 6 by multiplying 4 and 6 together to get 24. Then I added on 24 again and again: 24, 48, 72 . . .

Rosie: I think your method might miss some common multiples.

Jack

Rosie

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

_____
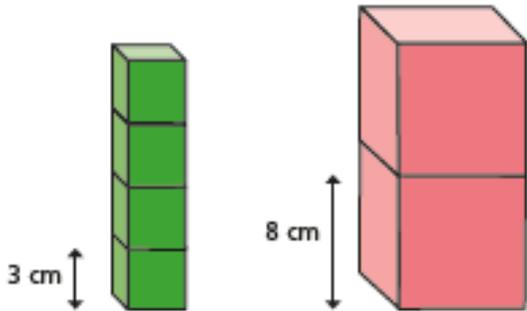
c) 15 and 10

_____

6 Rita has 2 grandchildren in different years at school.

On Rita's 90th birthday she says to her grandchildren,

"My age is a multiple of both your ages today."

How old could Rita's grandchildren be?

Describe two different solutions.

_____

_____

_____

7

3 cm

8 cm

Scott is building a tower from blocks 3 cm tall.

Dora is building a tower from blocks 8 cm tall.

They each build a tower taller than 50 cm, but shorter than 1 m.

The towers are exactly the same height.

How tall could the towers be?

_____

factors