Divisibility

If there is no remainder, we say **division is exact**. For example,

18 ÷ 9 = 2, the remainder is 0.	24 ÷ 4 = 6, R 0.	33 ÷ 11 = 3, R 0.
We say: **18 is divisible by 9**.	**24 is divisible by 4**.	**33 is divisible by 11**.

If there ***is*** a remainder, we say **division is not exact**. For example,

15 ÷ 4 = 3, remainder 3.	17 ÷ 7 = 2, R 3.	20 ÷ 3 = ___, R ___ .
15 is NOT divisible by 4.	**17 is not divisible by 7**.	**20 is not divisible by 3**.

1. Follow the example and find if the following numbers are divisible by given numbers.

a. Is 15 divisible by 5? Yes, because 15 ÷ 5 = 3, R 0.	**b.** Is 22 divisible by 2? Yes/no, because
c. Is 17 divisible by 5? No, because 17 ÷ 5 = 3, R 2. There is a remainder.	**d.** Is 14 divisible by 3? Yes/no, because
e. Is 24 divisible by 5? Yes/no, because	**f.** Is 30 divisible by 5? Yes/no, because
g. Is 17 divisible by 3?	**h.** Is 27 divisible by 3?
i. Is 14 divisible by 2?	**j.** Is 48 divisible by 12?

2. If the division is exact, mark the remainder as 0.

1 ÷ 3 = 0, R 1	10 ÷ 3 = ___, R ___	19 ÷ 3 = ___, R ___	28 ÷ 3 = ___, R ___
2 ÷ 3 = 0, R 2	11 ÷ 3 = ___, R ___	20 ÷ 3 = ___, R ___	29 ÷ 3 = ___, R ___
3 ÷ 3 = ___, R ___	12 ÷ 3 = ___, R ___	21 ÷ 3 = ___, R ___	30 ÷ 3 = ___, R ___
4 ÷ 3 = ___, R ___	13 ÷ 3 = ___, R ___	22 ÷ 3 = ___, R ___	31 ÷ 3 = ___, R ___
5 ÷ 3 = ___, R ___	14 ÷ 3 = ___, R ___	23 ÷ 3 = ___, R ___	32 ÷ 3 = ___, R ___
6 ÷ 3 = ___, R ___	15 ÷ 3 = ___, R ___	24 ÷ 3 = ___, R ___	33 ÷ 3 = ___, R ___
7 ÷ 3 = ___, R ___	16 ÷ 3 = ___, R ___	25 ÷ 3 = ___, R ___	34 ÷ 3 = ___, R ___
8 ÷ 3 = ___, R ___	17 ÷ 3 = ___, R ___	26 ÷ 3 = ___, R ___	35 ÷ 3 = ___, R ___
9 ÷ 3 = ___, R ___	18 ÷ 3 = ___, R ___	27 ÷ 3 = ___, R ___	36 ÷ 3 = ___, R ___

Numbers that were divisible by 3: _____

Where have you seen that list before?

31 ÷ 5 = ___, R ___	41 ÷ 5 = ___, R ___	51 ÷ 5 = ___, R ___	61 ÷ 5 = ___, R ___
32 ÷ 5 = ___, R ___	42 ÷ 5 = ___, R ___	52 ÷ 5 = ___, R ___	62 ÷ 5 = ___, R ___
33 ÷ 5 = ___, R ___	43 ÷ 5 = ___, R ___	53 ÷ 5 = ___, R ___	63 ÷ 5 = ___, R ___
34 ÷ 5 = ___, R ___	44 ÷ 5 = ___, R ___	54 ÷ 5 = ___, R ___	64 ÷ 5 = ___, R ___
35 ÷ 5 = ___, R ___	45 ÷ 5 = ___, R ___	55 ÷ 5 = ___, R ___	65 ÷ 5 = ___, R ___
36 ÷ 5 = ___, R ___	46 ÷ 5 = ___, R ___	56 ÷ 5 = ___, R ___	66 ÷ 5 = ___, R ___
37 ÷ 5 = ___, R ___	47 ÷ 5 = ___, R ___	57 ÷ 5 = ___, R ___	67 ÷ 5 = ___, R ___
38 ÷ 5 = ___, R ___	48 ÷ 5 = ___, R ___	58 ÷ 5 = ___, R ___	68 ÷ 5 = ___, R ___
39 ÷ 5 = ___, R ___	49 ÷ 5 = ___, R ___	59 ÷ 5 = ___, R ___	69 ÷ 5 = ___, R ___
40 ÷ 5 = ___, R ___	50 ÷ 5 = ___, R ___	60 ÷ 5 = ___, R ___	70 ÷ 5 = ___, R ___

Numbers that were divisible by 5: _____

Where have you seen that list before?

3. **a.** Write a list of twelve different numbers that are divisible by 6.

b. Then write twelve different numbers that are NOT divisible by 6.

4. Divide by 10! Discuss with your teacher the patterns you notice.

0 ÷ 10 = 0, R __	10 ÷ 10 = ___, R ___	20 ÷ 10 = ___, R ___	30 ÷ 10 = ___, R ___
1 ÷ 10 = 0, R 1	11 ÷ 10 = ___, R ___	21 ÷ 10 = ___, R ___	31 ÷ 10 = ___, R ___
2 ÷ 10 = 0, R 2	12 ÷ 10 = ___, R ___	22 ÷ 10 = ___, R ___	32 ÷ 10 = ___, R ___
3 ÷ 10 = ___, R ___	13 ÷ 10 = ___, R ___	23 ÷ 10 = ___, R ___	33 ÷ 10= ___, R ___
4 ÷ 10 = ___, R ___	14 ÷ 10 = ___, R ___	24 ÷ 10 = ___, R ___	34 ÷ 10 = ___, R ___
5 ÷ 10 = ___, R ___	15 ÷ 10= ___, R ___	25 ÷ 10 = ___, R ___	35 ÷ 10= ___, R ___
6 ÷ 10 = ___, R ___	16 ÷ 10 = ___, R ___	26 ÷ 10 = ___, R ___	36 ÷ 10 = ___, R ___
7 ÷ 10 = ___, R ___	17 ÷ 10 = ___, R ___	27 ÷ 10 = ___, R ___	37 ÷ 10 = ___, R ___
8 ÷ 10= ___, R ___	18 ÷ 10 = ___, R ___	28 ÷ 10 = ___, R ___	38 ÷ 10 = ___, R ___
9 ÷ 10 = ___, R ___	19 ÷ 10 = ___, R ___	29 ÷ 10 = ___, R ___	39 ÷ 10 = ___, R ___

Make a list of numbers less than 150 that are divisible by 10:

_____

5. Did you notice the pattern of reminders in the previous exercise? Based on that you can easily solve these:

a.	**b.**	**c.**
41 ÷ 10 = ____, R ___	77 ÷ 10 = ____, R ___	99 ÷ 10 = ____, R ___
56 ÷ 10 = ____, R ___	41 ÷ 10 = ____, R ___	100 ÷ 10 = ____, R ___
92 ÷ 10 = ____, R ___	80 ÷ 10 = ____, R ___	101 ÷ 10 = ____, R ___
60 ÷ 10 = ____, R ___	53 ÷ 10 = ____, R ___	122 ÷ 10 = ____, R ___