

DIVISIBILITY

A number is said to be **divisible** by another number if there is no remainder after the division has occurred.

ex: 12 is divisible by 2 as $12 \div 2 = 6$

14 is NOT divisible by 5 as $14 \div 5 = 2 \text{ rem } 3$

If the division divides the dividend exactly, then the divisor is said to be **a factor of that number**.

ex: in the example above, 2 is a factor of 12

DIVISION NOTATION

Example: $27 \div 4 = 6$ remainder 3

The diagram illustrates the division equation $\frac{27}{4} = 6 \text{ rem. } 3 = 6\frac{3}{4}$. Red arrows point from the labels 'dividend' and 'divisor' to the numbers 27 and 4 respectively. Another set of red arrows points from the label 'quotient' to the number 6 in both the integer and mixed fraction forms. A final set of red arrows points from the label 'remainder' to the number 3 in both the integer and mixed fraction forms. The number 3 in the mixed fraction is circled in red.

dividend \longrightarrow $\frac{27}{4} = 6 \text{ rem. } 3 = 6\frac{3}{4}$

divisor \longrightarrow $\frac{27}{4} = 6 \text{ rem. } 3 = 6\frac{3}{4}$


quotient \longleftarrow 6 \longleftarrow 6

remainder \longleftarrow 3 \longleftarrow 3

Another way of representing this information is $27 = 4 \times 6 + 3$


DIVISIBILITY - KEY TERMS

- **DIVIDEND**: the starting number; the total; the amount you have
- **DIVISOR**: the number doing the dividing; the number of groups
- **QUOTIENT**: the number of times the divisor went into the dividend
- **REMAINDER**: the number left over; the number remaining

 **2**


Numbers that end in 0, 2, 4, 6 or 8 are even and can be divided by 2.

32
14
206
68
30

3 


The sum of the digits must be divisible by 3.

63
27
12
6
48

 **4**


The number formed from the last two digits must be divisible by 4.

12
312
16
216

 **5**


The last digit must be 0 or 5.

30
50
75
85
125

 **6**


The number must be divisible by 2 and 3.

48
24
24
6
72

7 


There is no test for divisibility by 7.

49
56
63
70

8 


The number formed from the last three digits must be divisible by 8.

64
40
120
320
4320

9 

The sum of the digits must be divisible by 9.

54
216
621
882

 **10**

The last digit must be 0.

90
200
650
2130