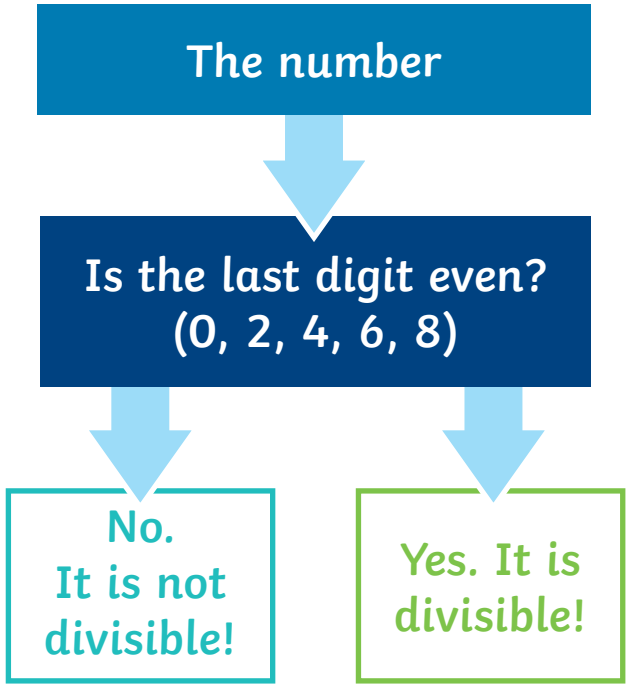
2

A number is divisible by two if the last digit is even (0, 2, 4, 6, 8).



Try it!

128

8 is even

Yes, it is divisible by 2!

257

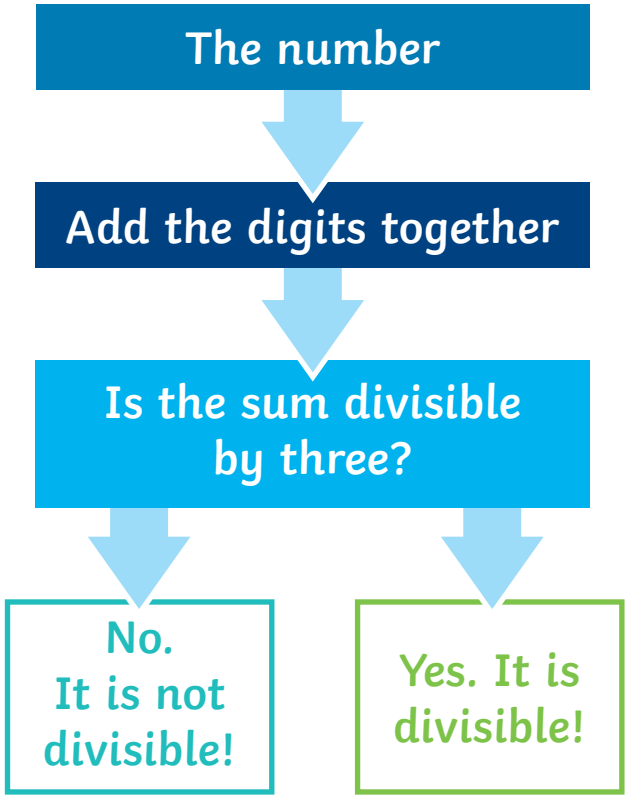
7 is odd

No, it is not divisible by 2!

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3

A number is divisible by three if the sum of the digits is divisible by three.



Try it!

282

2 + 8 + 2 = **12** → 12 ÷ 3 = 4 Yes!

263

2 + 6 + 3 = **11** → 11 ÷ 3 = 3.67 No!

9963

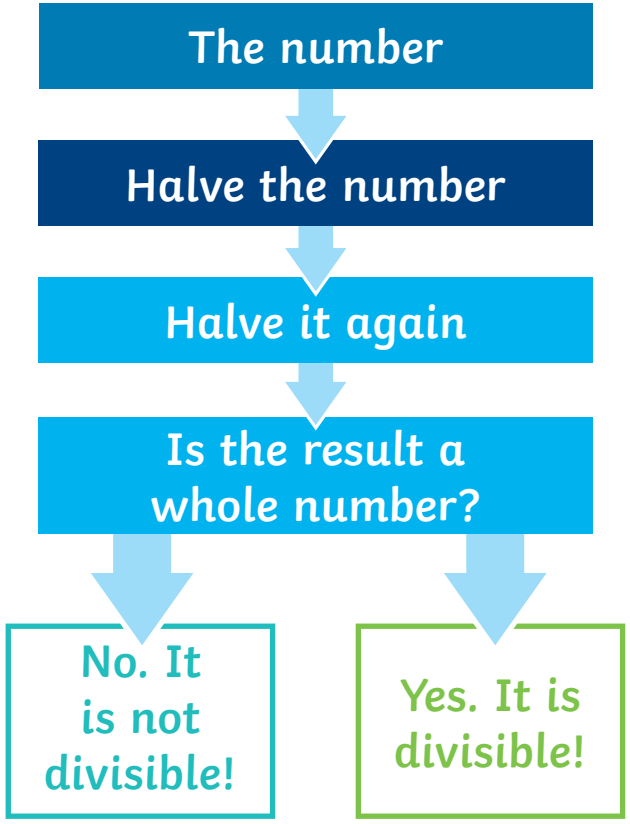
9 + 9 + 6 + 3 = **27** 2 + 7 = **9**

→ 9 ÷ 3 = 3 Yes!

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4

A number is divisible by four if when you halve the number, then halve it again, the result is a whole number.



Try it!

Rule for bigger numbers: It is divisible by four if the last two digits are easily divided by four.

128

128 ÷ 2 = 64 → 64 ÷ 2 = 32 Yes!

13<u>12</u>

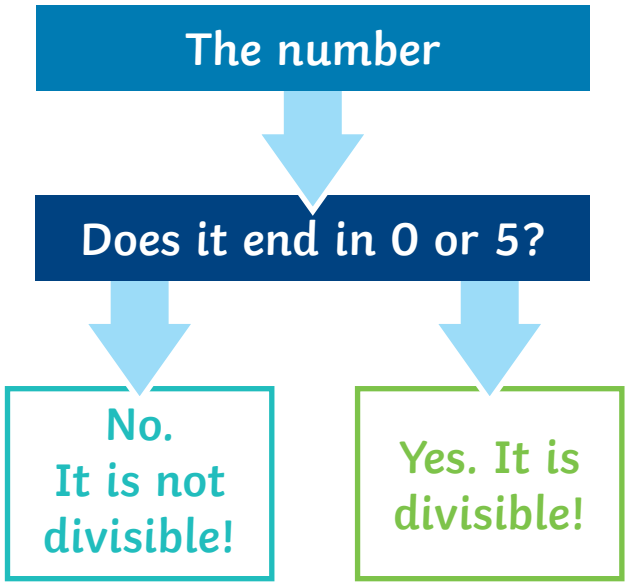
last two digits are 12.

12 ÷ 4 = 3 Yes!

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5

If a number ends in a zero or a five, it is divisible by five.



Try it!

175

It ends in a 5.

Yes, it is divisible by 5!

809

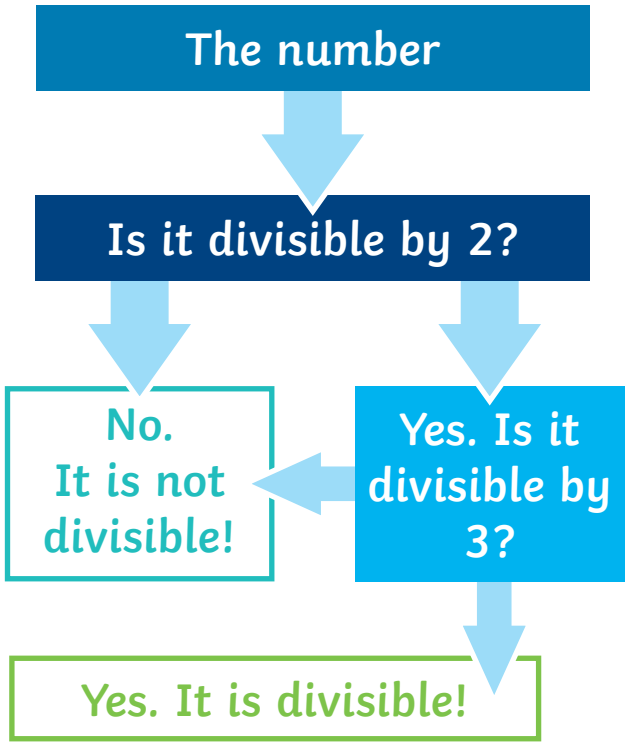
It does not end in a 5 or a 0.

No, it is not divisible by 5!

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6

A number is divisible by six if the number can be divided by both two and three (use their rules of divisibility).



Try it!

204 It is even. → 2 + 0 + 4 = 6 6 ÷ 3 = 2

Yes, it is divisible by 6!

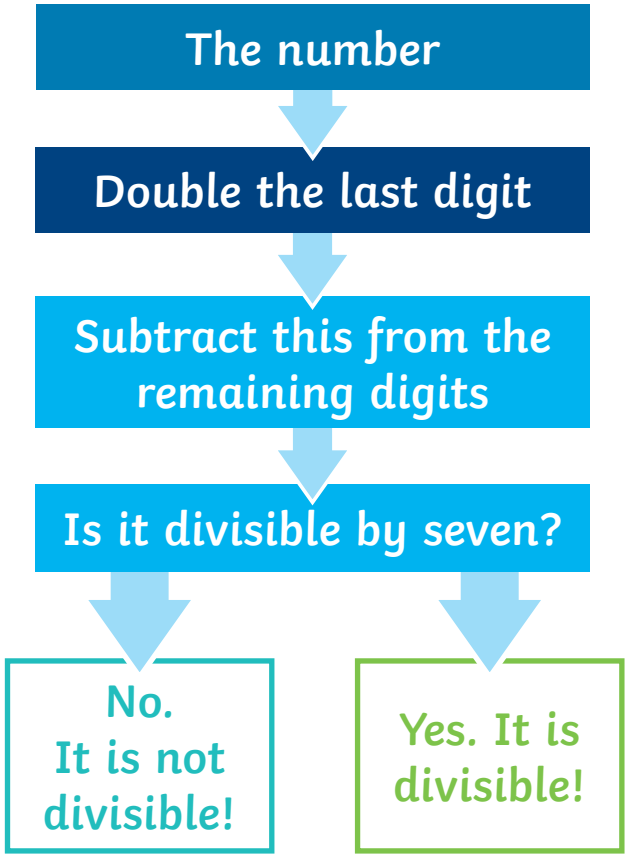
218 It is even. → 2 + 1 + 8 = 11 11 ÷ 3 = 3.67

No, it is not divisible by 6!

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7

To find out if a number is divisible by seven, double the last digit then subtract this from the number left by the remaining digits. The result must be divisible by seven.



Try it!

707

double 7 = **14** → 70 - 14 = 56

56 ÷ 7 = 8 Yes!

845

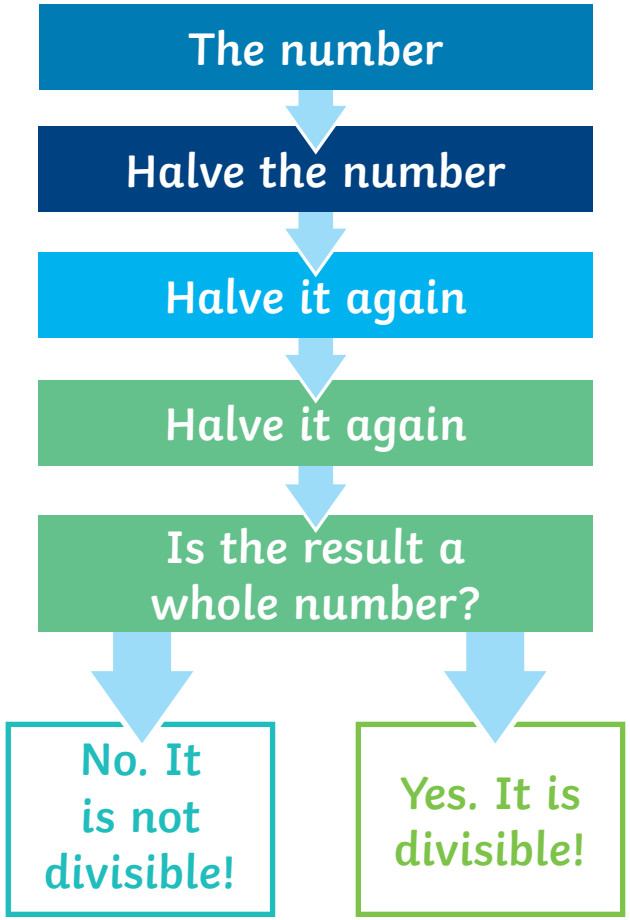
double 5 = **10** → 84 - 10 = 74

74 ÷ 7 = 10.57 No!

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8

A number is divisible by eight if you can halve the number, halve it again, then halve it again and it ends with a whole number.



Try it!

Rule for bigger numbers: A number is divisible by eight when the last three digits can be divided by eight.

424

half = 212 → half again = 106

half again = 58 Yes!

207816

last three digits are 816

816 ÷ 8 = 102 Yes!

37634

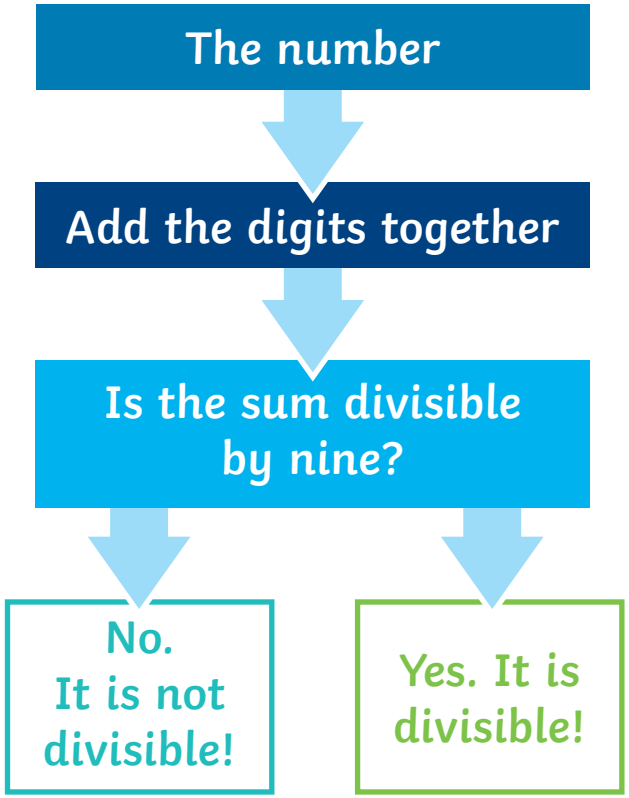
last three digits are 634

634 ÷ 8 = 79.25 No!

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9

A number is divisible by nine if the sum of the digits can be divided by nine.



Try it!

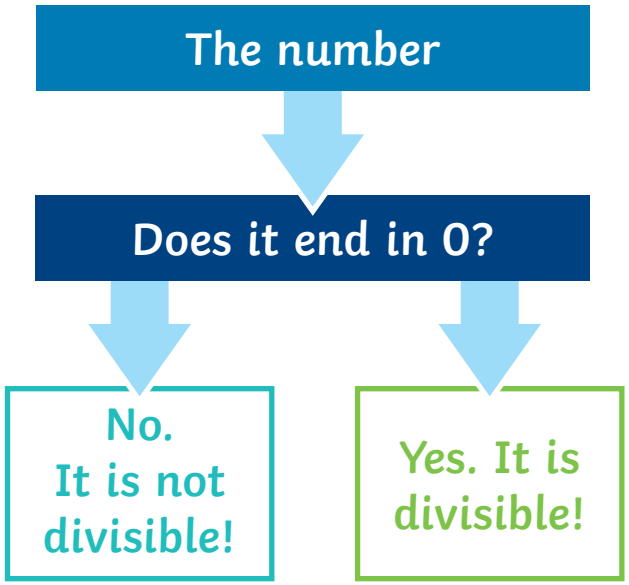
729 7 + 2 + 9 = **18** → 18 ÷ 9 = 2 Yes!

2873 2 + 8 + 7 + 3 = **20** → 20 ÷ 9 = 2.2 No!

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10

A number is divisible by ten if it ends in zero.



Try it!

460

It ends in 0.

Yes, it is divisible by 10!

6589

It does not end in 0.

No, it is not divisible by 10!

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11

A number is divisible by eleven when the numbers are repeated.

Rule for 2-digit numbers

The number

Are the numbers repeated?

- No. It is not divisible!
- Yes. It is divisible!

Try it!

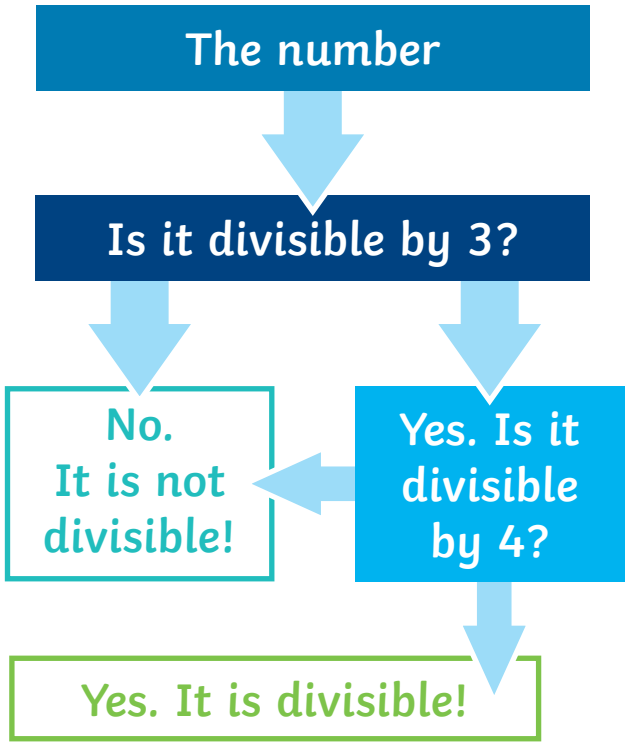
Rule for bigger numbers: A number is divisible by eleven when you add then subtract digits in an alternating pattern (subtract digit, add next digit, subtract the next digit, etc). The answer must then be divisible by eleven.

- **44** — 4 is repeated → Yes!
- **2475** — 2 - 4 + 7 - 5 = **0** → 0 ÷ 11 = **0** Yes!
- **8375** — 8 - 3 + 7 - 5 = **7** → 7 ÷ 11 = **0.63** No!

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12

A number is divisible by both three and four (use their rules of divisibility).



Try it!

756

7 + 5 + 6 = 18
18 ÷ 3 = 6
→ 56 ÷ 4 = 14 Yes!

744

7 + 4 + 4 = 15
15 ÷ 3 = 5
→ 44 ÷ 4 = 11 Yes!

435

4 + 3 + 5 = 12
12 ÷ 3 = 4
→ 35 ÷ 4 = 8.75 No!

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