### 1.1 Divisibility by 10, 5, and 2



Create and use divisibility rules to determine if 10, 5, or 2 is a factor of a whole number.

- 1. For each number, answer these questions:
  - Is it an even number?
  - Does it end in 5 or 0?
  - Does it end in 0?

Then, circle the factor(s) of the number.

a) 2458

Circle the factor(s): 10

b) 147 905

Circle the factor(s): 10

c) 3 324 670

Circle the factor(s): (10) (5) (2)

d) 21 875

Circle the factor(s): 10 (5) 2

e) 190

Circle the factor(s): (10) (5) (2)

f) 3832

Circle the factor(s): 10

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In a multiplication operation, you multiply factors to get a product.

 $\times$  2 = 10

### Some Divisibility Rules

- · A number that is even is divisible by 2.
- A number that ends in 5 or 0 is divisible by 5.
- A number that ends in 0 is divisible by 10.
- 2. Create a 4-digit number to fit each of the following rules.
  - a) This number is divisible by 5 but not by 10 or 2. 2025
  - b) This number is divisible by 2 but not by 10 or 5. 1998
  - c) This number is divisible by 10, 5, and 2. 4520
- 3. List all the numbers between 3400 and 3500 that are divisible by 10, 5, and 2. Explain your thinking.

3400, 3410, 3420, 3430, 3440, 3450, 3460,

3470, 3480, 3490, 3500.

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# 1.2 Divisibility by 3 and 9

### GOAL

Apply divisibility rules to determine if 3 or 9 is a factor of a whole number.

Which of these numbers are divisible by 3?

Use divisibility rules.

7+3+1+7:18~ a) 7317

1+9+3+3+3=19 b) 19 333x

1+8+6+3=18

(c)) 1863

1+0+7+8+1=17

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Some Divisibility Rules

is divisible by 3.

divisible by 3.

is divisible by 9.

divisible by 9.

· If the sum of a number's digits

For example, 342 (sum of

digits = 3 + 4 + 2 = 9) is

is a multiple of 3, the number

If the sum of a number's digits

is a multiple of 9, the number

digits = 3 + 4 + 2 = 9) is also

For example, 342 (sum of

6+7+3+9+8=33

e) 67 398~ 3+3+3+3+2=14

f) 33 332 x

2. Which of these numbers are divisible by 9?

Use divisibility rules. 9+1+0+2=12

a) 9102×

7+1+4+5+1=18 **ⓑ)** 71 451 ~

27 000

2+5+2+7+8=24

d) 25 278X 8+8+2=18

e) 88 002 1144612=13

f) 1462<sub>x</sub>

3. Determine whether each number is divisible by 3. Divide by 3 to check your answer.

@ 915 915÷3=305 ro

0 (b) 11 100 ///00÷3=3700 /g

~ @ 7.12333 2374/1

4. Fill in the missing digit to make each number divisible by 9.

a) 67.32

c) 5\_220

b) 256<u>5</u>

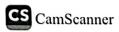
d) 5211

5. What is the greatest number between 5000 and 6000 that is divisible by both 3 and 9? Explain your thinking.

5994

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## 1.3 Divisibility by 6

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Create and use a rule to determine if 6 is a factor of a whole number.

- 1. Which of these numbers is divisible by 2? Use divisibility rules.
  - (a) 6210

c) 22 973

**(b)** 73 198

(d) 110 736

- 2. Which of these numbers is divisible by 3? Use divisibility rules.
  - (a) 9102

**(c)** 25 278

(b) 71 451

(d) 88 002

3. Which of the numbers in questions 1 and 2 are also

from question 1 - 6210, 110736.

From question 2 -09102, 25278, 88002

4. Circle each correct factor.

a) 1862

10

b) 25 716

**2 3 5 6 9** 

c) 387

6 (9)

d) 70 000

6 9

e) 42 831

f) 2732445

- 5. Fill in the missing digit to make each number divisible by 6. There may be more than one correct answer.
  - a) 9828
- b) 9.3 24
- c) 783 O
- d) \_L062

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divisible by 2.

is divisible by 3.

The sum of the digits is

divisible by 2.

Some Divisibility Rules A number that is even is

If the sum of a number's digits is a multiple of 3, the number

 A number that is divisible by both 2 and 3 is divisible by 6.

For example, 138 is even, so it is

1 + 3 + 8 = 12, which is divisible

by 3, so 138 is divisible by 3. Because it is divisible by 2 and

by 3, 138 is divisible by 6.

6. Explain why no odd number is divisible by 6. Give examples.

To be Divisible by 6

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