

Types of Division

A supplemental lesson for Firia Labs CodeX - AP CSP



Types of Division

- A single / is decimal division
- Two // is integer division
- // gives the whole number only in the division problem

$$4 \overline{) 7} \quad \text{1}$$

$$7 // 4 = 1$$

- Examples:
 - $8 / 4 = 2.0$
 - $8 // 4 = 2$
 - $6 / 5 = 1.2$
 - $6 // 5 = 1$
 - $5 / 6 = .83$
 - $5 // 6 = 0$



Part 2: The Answers Are ...

$$7 / 4 = 1.75$$

$$7 // 4 = 1$$

$$7 \text{ ⠠ } 4 = 3$$

$$5 / 3 = 1.667$$

$$5 // 3 = 1$$

$$5 \text{ ⠠ } 3 = 2$$

$$12 / 5 = 2.4$$

$$12 // 5 = 2$$

$$12 \text{ ⠠ } 5 = 2$$

$$9 / 2 = 4.5$$

$$9 // 2 = 4$$

$$9 \text{ ⠠ } 2 = 1$$



Modulo Division

- % gives the remainder of integer division

$$4 \overline{) 7} \quad 1 \quad r \quad 3$$

$$7 \% 4 = 3$$

Dividend

Divisor

$$25 \div 7 = 3 \text{ remainder } 4$$
$$25 \% 7 = 4$$

Modulo Operator: returns the remainder of a division



Modulo division

- Limits the number of possible answers
 - Any_number % 3 can only be 0, 1, or 2
- Lets you break apart place values of numbers
- Is used for numerical conversions
- Gives you “leftovers”
- And much, much more!

Two Digit Number

Number: 82

10s Place: 8

1s Place: 2

Convert to feet and inches

Initial measurement: 25

Feet: 2

Inches: 1

Packages and leftovers

Cookies made: 2266

Cookies per pack: 22

Packages completed: 103

Cookies leftover: 0



Part 3: Check your understanding

Given:

number % 10

What are the possible answers?

Given:

number % 5

What are the possible answers?

Given:

number % 3

What are the possible answers?



Part 3: Check your understanding

Given:

number % 10

What are the
possible answers?

0, 1, 2, 3, 4, 5, 6, 7, 8,
9

Given:

number % 5

What are the
possible answers?

0, 1, 2, 3, 4

Given:

number % 3

What are the
possible answers?

0, 1, 2



Part 3: Check your understanding

Evaluate:

$$10 // 7 =$$

$$10 \% 7 =$$

Evaluate:

$$10 // 3 =$$

$$10 \% 3 =$$

Evaluate:

$$10 // 4 =$$

$$10 \% 4 =$$



Part 3: Check your understanding

Evaluate:

$$10 \ // \ 7 = 1$$

$$10 \ \% \ 7 = 3$$

Evaluate:

$$10 \ // \ 3 = 3$$

$$10 \ \% \ 3 = 1$$

Evaluate:

$$10 \ // \ 4 = 2$$

$$10 \ \% \ 4 = 2$$



Part 3: Check your understanding

Evaluate:

$$10 // 5 =$$

$$10 \% 5 =$$

Evaluate:

$$4 // 5 =$$

$$4 \% 5 =$$

Create your own
problem:



Part 3: Check your understanding

Evaluate:

$$10 // 5 = 2$$

$$10 \% 5 = 0$$

Evaluate:

$$4 // 5 = 0$$

$$4 \% 5 = 4$$

Create your own
problem:

