INTEGERS

Division of Integers

SUBJECT : MATHEMATICS
CHAPTER NUMBER: 01
CHAPTER NAME : INTEGERS

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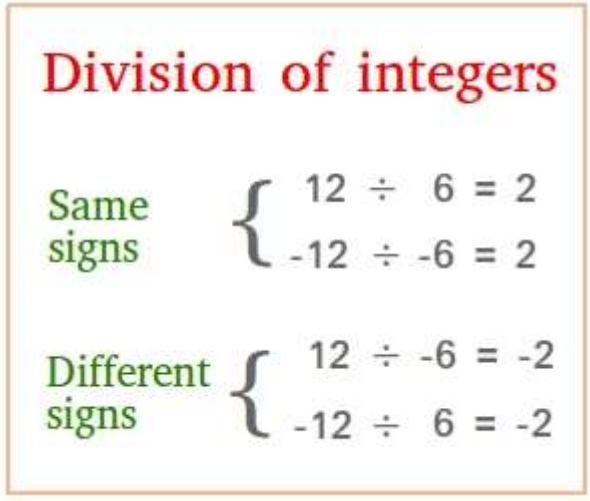
Learning outcome

Students will be able to

- divide integers with the same sign
- divide integers with different signs
- evaluate problems involving arithmetic (+, -, x , ÷) operations



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Previous knowledge test

- 6 ÷ 3 = ?= 2
- (6) ÷ (3)= ? 2

- **Video on division of integers**

https://www.youtube.com/watch?v=0-tksHOvW40 (7: 14minutes)

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Division of integers

Same signs

$12 \div 6 = 2$

$-12 \div -6 = 2$

Different signs

$12 \div -6 = -2$

$-12 \div 6 = -2$

Note 1 : In a division,
the number to be divided is called dividend
the number which divides is called divisor
the result of division is called quotient

Note 2: Dividend ÷ divisor = quotient

Properties of division of integers

i) If x and y are integers, then $x \div y$ is not necessarily an integer.

ii) If x is an integer different from 0, then $x \div x = 1$.

iii) For every integer x, we have $x \div 1 = x$.

iv) If x is a non-zero integer, then $0 \div x = 0$.

v) If x is an integer, then $x \div 0$ is not meaningful.

vi) If x, y, z are non-zero integers, then $(x \div y) \div z \neq x \div (y \div z)$, unless $z=1$

vii) If x, y, z are integers, then

(a) $x > y \Rightarrow x \div z > y \div z$, if z is positive.

(a) $x > y \Rightarrow x \div z < y \div z$, if z is negative.

Ex. 1B

Q. No. 1

(*i*) 117 by 9 $= \frac{117}{9} = \frac{13 \times 9}{9} = 13$

(*ii*) (–117) by 9 $= \frac{-117}{9} = \frac{-13 \times 9}{9} = -13$

(*iii*) 117 by (–9) $= \frac{117}{-9} = \frac{13 \times 9}{-9} = -13$

(*iv*) (–117) by (–9)

$= \frac{-117}{-9} = \frac{117}{9} = \frac{13 \times 9}{9} = 13$

(*v*) 225 by (–15) $= -\frac{225}{15} = -\frac{15 \times 15}{15} = -15$

(*vi*) (–552) ÷ 24 $= -\frac{552}{24} = -\frac{23 \times 24}{24} = -23$

(*vii*) (–798) by (–21)

$= \frac{-798}{-21} = \frac{798}{21} = \frac{38 \times 21}{21} = 38$

(*viii*) (–910) ÷ 26 $= -\frac{910}{26} = -\frac{35 \times 26}{26} = -35$

Q.No. 3

(*i*) $299 \div 23 = \frac{299}{23} = \frac{23 \times 13}{23} = 13$

(*ii*) $299 \div (-23) = -\frac{299}{23} = -\frac{23 \times 13}{23} = -13$

(*iii*) $(-384) \div 16 = -\frac{384}{16} = -\frac{24 \times 16}{16} = -24$

(*iv*) $(-572) \div (-22) = \frac{-572}{-22}$

$= \frac{572}{22} = \frac{26 \times 22}{22} = 26$

(*v*) $408 \div (-17) = -\frac{408}{17} = -\frac{24 \times 17}{17} = -24$

HW

Exercise 1A Q No. 10

Evaluate

i) (-1855) ÷ 53

ii) 523 ÷ 0

THANKING YOU

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