

(#) Properties :- for any integer a and b \rightarrow

$$(i) \quad a \div (-b) = (-a) \div (b) \quad \text{where } b \neq 0$$

$$(ii) \quad (-a) \div (-b) = a \div b \quad \text{where } b \neq 0$$

$$(iii) \quad a \div 0 = \infty \text{ (Not defined)} \rightarrow \text{Infinity}$$

$$(iv) \quad a \div 1 = a \quad (v) \quad 0 \div a = 0$$

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Q!-① Evaluate each of the following :

$$(a) \quad (-30) \div 10 = \frac{-30}{10} = -3$$

$$(b) \quad 50 \div (-5) = \frac{50}{-5} = -10$$

$$(c) \quad (-36) \div (-9) = \frac{-36}{-9} = \frac{36}{9} = 4$$

$$(d) \quad (-49) \div 49 = \frac{-49}{49} = -1$$

$$(e) \quad 13 \div [(-2) + 1] = 13 \div (-1) = \frac{13}{-1} = -13$$

$$(f) \quad 0 \div (-12) = \frac{0}{-12} = 0$$

$$(g) \quad (-31) \div [(-30) + (-1)] = (-31) \div [-30 - 1] = -31 \div -31 = \frac{-31}{-31} = 1$$

$$(h) \quad [(-36) \div 12] \div 3 = \left[\frac{-36}{12} \right] \div 3 = -3 \div 3 = \frac{-3}{3} = -1$$

$$(i) \quad [(-6) + 5] \div [(-2) + 1] = [-6 + 5] \div [-2 + 1]$$

$$= -1 \div -1$$

$$= \frac{-1}{-1}$$

$$= \frac{1}{1}$$

$$= 1$$

Q:-② Verify that $a \div (b+c) \neq (a \div b) + (a \div c)$ for each of the following values of a, b and c .

(a) $a=12, b=-4, c=2$

L.H.S. = $a \div (b+c) = 12 \div (-4+2) = 12 \div (-2) = \frac{12}{-2} = -6$

R.H.S. = $(a \div b) + (a \div c) = [12 \div (-4)] + [12 \div 2] = \frac{12}{-4} + \frac{12}{2} = -3 + 6 = 3$

So, L.H.S. \neq R.H.S. Hence verified.

(b) $a=(-10), b=1, c=1 \rightarrow$ for your homework

Q:-③ Fill in the blanks:

(a) $369 \div \underline{1} = 369$

(b) $(-75) \div \underline{75} = -1$

(c) $(-206) \div \underline{(-206)} = 1$

(d) $-87 \div \underline{(-1)} = 87$

(e) $\underline{-87} \div 1 = -87$

(f) $\underline{-48} \div 48 = -1$

(g) $20 \div \underline{(-10)} = -2$

(h) $\underline{-12} \div (4) = -3$

Q:-④ Write five pairs of integers (a, b) such that $a \div b = -3$.
One such pair is $(6, -2)$ because $6 \div (-2) = -3$

Soln. - Five pairs of integers (a, b) such that $a \div b = -3$ are

$12 \div (-4) = -3$

$9 \div (-3) = -3$

$-15 \div 5 = -3$

~~$18 \div (-6) = -3$~~

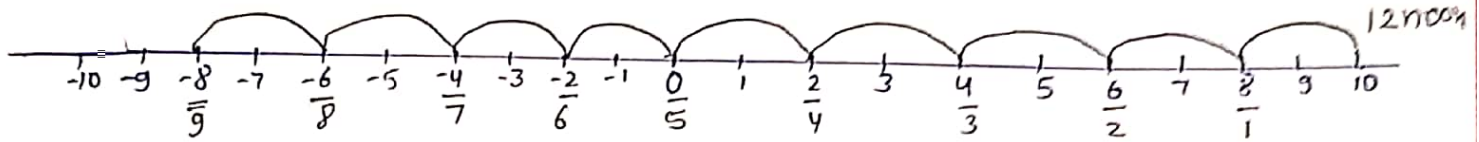
$-3 \div 1 = -3$

$18 \div (-6) = -3$

So pairs are $(12, -4), (9, -3), (-15, 5), (18, -6)$
and $(-3, 1)$.

Q!-(5) The temperature at 12 noon was 10°C above zero. If it decreases at the rate of 2°C per hour until midnight, at what time would the temperature be 8°C below zero? What would be the temperature at midnight?

Soln!:-



At 12:00 $\rightarrow 10^{\circ}\text{C}$
 1:00 $\rightarrow 10^{\circ}\text{C} - 2^{\circ}\text{C} = 8^{\circ}\text{C}$
 2:00 $\rightarrow 8 - 2 = 6$
 \vdots
 \vdots

At 8°C time is 9 o'clock.

12:00 = 10°C
 Change in tem = 12×-2
 $= -24^{\circ}\text{C}$
 After 12 hours = $10^{\circ}\text{C} - 24^{\circ}\text{C}$
 $= -14^{\circ}\text{C}$

Q!-(6) (i) marks for correct ans = $12 \times 3 = 36$
 marks for incorrect ans = $\rightarrow 20 - 36 = -16$
 questions attempted incorrectly = $\frac{-16}{-2} = 8$

(ii) marks for correct ans = $7 \times 3 = 21$
 marks for incorrect ans = $-5 - 21 = -26$

\therefore questions attempted incorrectly = $\frac{-26}{-2} = 13$

Q!-(7)
Soln!:-

Initial height = 10 m
 Final depth = -350m
 $= -350 - 10 = -360\text{ m}$

1 min = -6 m
 $-360\text{ m} = ?\text{ min}$

$\frac{-360}{-6} = \frac{360}{6} = 60\text{ min} = 1\text{ hour}$
 So it will take 1 hour to reach -350 m .

