Worksheet -10   Subject: - Mathematics   Class: - VII   Teacher: - Ms. Neeru

Name: _____ Class & Sec: _____ Roll No. _____ Date: 05.05.2020

Ex1.4   Q4-7

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

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 mid-night?

6. In a class test $(+3)$ marks are given for every correct answer and (-2) marks are given for every incorrect answer and no marks for not attempting any question. (i) Radhika scored 20 marks. If she has got 12 correct answers, how many questions has she attempted incorrectly? (ii) Mohini scores –5 marks in this test, though she has got 7 correct answers. How many questions has she attempted incorrectly? (iii) Rakesh scores 18 marks by attempting 16 questions. How many questions has he attempted correctly and how many has he attempted incorrectly?

7. An elevator descends into a mine shaft at the rate of 6 m/min. If the descent starts from 10 m above the ground level, how long will it take to reach – 350 m.

Ex 1.4, 4

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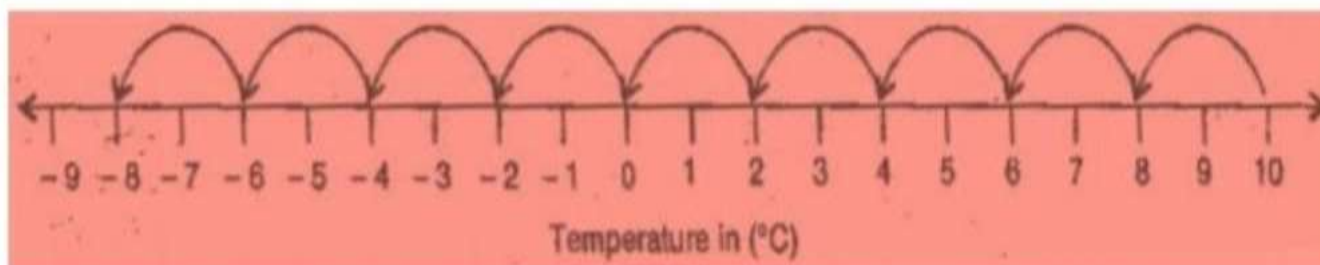
$a \div b = -3$

a	b	$a \div b$
6	-2	$\dfrac{6}{-2} = \dfrac{-6}{2} = -3$
-6	2	$\dfrac{-6}{2} = -3$
-3	1	$\dfrac{-3}{1} = -3$
-9	3	$\dfrac{-9}{3} = -3$
-12	4	$\dfrac{-12}{4} = -3$
-15	5	$\dfrac{-15}{5} = -3$

Question 5

The temperature at noon was 10⁰C above zero. If the decrease in temperature is at the ra of 2⁰C per hour until mid–night, at what time would the temperature be 8⁰C below zero? What would be the temperature at mid–night?

Answer 5:

Following number line is representing the temperature:

Temperature in (°C)

The temperature decreases 2^0C = 1 hour

The temperature decreases $1 \circ C = \dfrac{1}{2}$ hour

The temperature decreases $18 \circ C = \dfrac{1}{2} \times 18 = 9$ hours

Total time = 12 noon + 9 hours = 21 hours = 9 pm

Thus, at 9 pm the temperature would be 8⁰C below 0⁰C.

Temperature at 12 noon was 10°C above zero i.e. +10°C

Rate of decrease in temperature per hour = 2°C

Number of hours from 12 noon to midnight = 12

∴ Change in temperature in 12 hours

= 12 × (-2°C) = -24°C

∴ Temperature at midnight

= +10°C + (-24°C) = -14°C

Hence, the required temperature at midnight =-14°C

Question 6

In a class test (+3) marks are given for a correct answer and (–2) marks are given incorrect answer and no marks for not attempting any question.

(i) Radhika scored 20 marks. If she has got 12 correct answers, how many has she attempted incorrectly?

(ii) Mohini scores (–5) marks in this test, though she has got 7 correct ansv

How many questions has she attempted incorrectly?

Answer 6:

(i) Marks given for one correct answer = 3

Marks given for 12 correct answers = 3 x 12 = 36

Radhika scored 20 marks.

Therefore, Marks obtained for incorrect answers = 20 – 36 = –16

Now, marks given for one incorrect answer = –2

Therefore, number of incorrect answers = (–16) ÷ (–2) = 8

Thus, Radhika has attempted 8 incorrect questions.

(ii) Marks given for seven correct answers = 3 x 7 = 21

Mohini scores = –5

Marks obtained for incorrect answers = = –5 – 21 = –26

Now, marks given for one incorrect answer = –2
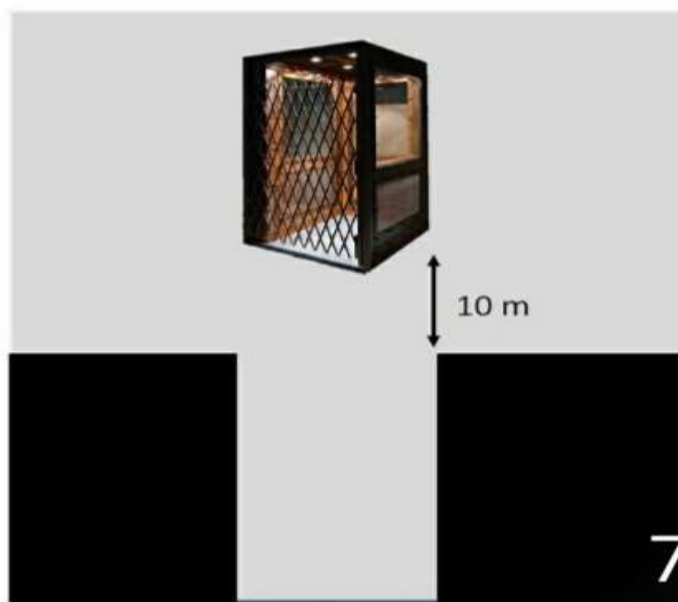
Therefore, number of incorrect answers = (–26) ÷ (–2) = 13

Thus, Mohini has attempted 13 incorrect questions.

Question 7

Ex 1.4, 7

An elevator descends into a mine shaft at the rate of 6 m/min. If the descent starts from 10 m above the ground level, how long will it take to reach − 350 m.

10 m

7:44 pm ✓✓

Total distance elevator has to travel = Initial position − final position

$$= 10 - (-350)$$

$$= 10 + 350$$

$$= 360 \text{ m}$$

Now,

      Elevator descends at rate 6m / min

∴ Elevator travels 6 m in = 1 minute

Elevator travels 1 m in = $\frac{1}{6}$ minute

Elevator travels 360 m in = $\frac{1}{6} \times 360$ minutes

$$= 60 \text{ minutes}$$

$$= 1 \text{ hour}$$

∴ It will take the elevator **1 hour**.

7:44 pm ✓

Working with the Properties of Mathematics

1) Which property is used in the following expression ?　　$3(6 + 5) = 18 + 15$
  A. Associative Property of Multiplication　　 **B.** Commutative Property of Addition　　＿＿＿＿
  C. Associative Property of Addition　　 **D.** Distributive Property

2) Which property of addition is used in the following ?　　$(7 + 9) + 5 = 7 + (9 + 5)$
  A. Distributive Property　　 **B.** Commutative Property　　＿＿＿＿
  C. Associative Property　　 **D.** Identity Property

3) Which is an example of Identity Property of Addition ?
  A. $9 + 7 = 7 + 9$　　 **B.** $(7 + 8) + 6 = 7 + (8 + 6)$　　＿＿＿＿
  C. $4 + 0 = 4$　　 **D.** $2 \times 1 = 2$

4) Which of the following does not show the Commutative Property of Addition ?
  A. $a + b = b + a$　　 **B.** $3 + x = x + 3$　　＿＿＿＿
  C. $ab = ba$　　 **D.** $3x + 4y = 4y + 3x$

5) Which operation will not change the value of any nonzero number ?
  A. Dividing by Zero　　 **B.** Multiplying by One　　＿＿＿＿
  C. Adding One　　 **D.** Multiplying by Zero

6) Which Property of Addition does $3 + 0 = 3$ illustrate ?
  A. Zero Property　　 **B.** Identity Property　　＿＿＿＿
  C. Commutative Property　　 **D.** Distributive Property

7) Which of the following does not show the Commutative Property ?
  A. $xy - 9 = xy$　　 **B.** $yx = xy$　　＿＿＿＿
  C. $x + y = y + x$　　 **D.** $3 + y = y + 3$

8) Which property is used in the following expression ?　　$(4 \times 9) \times 8 = 9 \times (8 \times 4)$
  A. Associative Property of Addition　　 **B.** Associative Property of Multiplication　　＿＿＿＿
  C. Distributive Property of Multiplication　　 **D.** Commutative Property of Addition

9) Which property is used in the following ?　　$3 \times (6 + 8) = 3 \times 6 + 3 \times 8$
  A. None of the above　　 **B.** Distributive Property　　＿＿＿＿
  C. Commutative Property　　 **D.** Associative Property

10) Which Property of Multiplication is shown ?　　$(5 + 8) \times 7 = 5 \times 7 + 8 \times 7$
  A. Associative Property　　 **B.** Commutative Property　　＿＿＿＿
  C. Distributive Property　　 **D.** Identity Property

ANSWERS

1. D	2. C	3. C	4. C	5. B
6. A, B	7. A	8. B	9. B	10. C