



**Work Sheet – 02 (Higher Mathematics) for class – Ten (28.09.2020), Chapter – Six, Exercise - 6.2, Inequality**

**Creative Multiplication Choice Questions**

- Alif has bought  $y$  pencils at Tk. 7 each and  $(y + 3)$  khatas at Tk. 9 each. If the total cost does not exceed Tk. 171 then what is the maximum number of pencils Alif has bought? [J.B.- 20]
  - 9
  - 10.50
  - 10.80
  - 12.40
- What is the solution of the inequalities  $\frac{x}{2} - 3 > \frac{x}{3} - 2$ ? [D.B.- 17]
  - $x > 6$
  - $x > -6$
  - $x < 6$
  - $x > 1$
- A piece of rectangular slab of length  $x$  cm and breadth 4 cm is taken from a wood slab of area 36 square cm. What is the possible value of  $x$  of the followings? [C.B.- 17]
  - $0 \leq x \leq 9$
  - $0 < x < 36$
  - $4 \leq x \leq 9$
  - $4 < x < 9$
- Which one is the solution set of the inequality  $4x + 5 > 25$ ? [J.B.- 17]
  - $S = \{x \in \mathbb{R} : x > 5\}$
  - $S = \{x \in \mathbb{R} : x < 5\}$
  - $S = \{x \in \mathbb{R} : x \leq 5\}$
  - $S = \{x \in \mathbb{R} : x \geq 5\}$
- 4 times of a positive number is not less than the sum of the number with 18 then which one is correct? [S.B.- 16]
  - $x = 6$
  - $x > 6$
  - $x \geq 6$
  - $x < 6$
- The area of a piece of paper is 48 square cm. A rectangular piece  $x$  cm long and 6 cm wide is cut off from it. What is the possible value of  $x$ ? [S.B.- 17]
  - $8 < x < 6$
  - $-6 < x < 8$
  - $6 < x < 8$
  - $6 < x < -8$
- A student buys 5 ballpens at  $x$  tk each and 7 pencils at  $(x + 4)$  tk each from a

shopkeeper for not more than 112 takas. Which is the correct expression of  $x$ ? [D.B.- 15]

- $11 > x \geq 7$
  - $11 \geq x \geq 7$
  - $0 < x \leq 7$
  - $0 < x < 7$
- A student has bought  $x$  pencils at Tk. 8 each and  $(12 - x)$  khatas at Tk. 5 each. If the total cost does not exceed Tk. 99 then what is the maximum number of pencils he has bought?
    - $x \leq 13$
    - $x \leq 12$
    - $x \geq 13$
    - $x \geq 12$
  - A student has bought  $x$  pens at Tk. 10 each and  $(x + 5)$  tk 15 each. If the total cost does not exceed Tk. 225. What is the maximum number of pens having — bought?
    - 5
    - 6
    - 7
    - 8
- Answer to the questions No. (10 – 11) after reading the section given below:
- A student has bought  $x$  pencils at Tk. 10 each and  $(x + 3)$  khatas at Tk. 6 each the total price of these does not exceed Tk. 114.
- Which inequality expresses the problem?
    - $10x + 6(x + 3) < 114$
    - $10x + 6(x + 3) \leq 114$
    - $10x + 6(x + 3) > 114$
    - $10x + 6(x + 3) \geq 114$
  - What is the maximum number of pencils the Student bought?
    - 2
    - 3
    - 5
    - 6
  - Tahmid gets  $4x$  and  $5x$  marks in Bengali and English respectively. His total mark is not more than 90. Which of the following is the solution of the inequality?
    - $x < 10$
    - $x \leq 10$
    - $x > 10$
    - $x \geq 10$
  - Two times a positive integer is greater than the sum of the number and 15. Which of the following is the right inequality?

- a)  $2x > x + 15$       b)  $x > 2x + 15$   
 c)  $x + 15 > 2x$       d)  $x < 2x + 15$

14. The area of a piece of paper is 40 square cm. A rectangular piece of  $x$  cm long and 5 cm wide is cut off from it. Which of the following is the possible value of  $x$ ?

- a)  $8 < x < 5$       b)  $-5 < x < 8$   
 c)  $5 < x < 8$       d)  $5 < x < -8$

15. Faria got 6 marks more than Nabila in the Mathematics examination out of not more than 180. What will be the expression in inequality (When Faria's mark is  $x$ )?

- a)  $2x + 6 \leq 180$       b)  $2x - 6 \leq 180$   
 c)  $2x + 6 \geq 180$       d)  $2x - 6 \geq 180$

16. The age of Eshan is more than his brother but less than his sister. If the age of his brother is 5 years the age of his sister is 12 years and his age is  $x$  then which of the following is right?

- a)  $5 < x < 12$       b)  $5 \leq x \leq 12$   
 c)  $5 > x > 12$       d)  $5 \geq x \geq 12$

17. A student has bought  $x$  pens at Tk. 3 each and  $(x + 2)$  khatas at Tk. 2 each. If the total cost doesn't less than Tk. 104 then what is the minimum number of pens he has bought?

- a) 20      b) 18  
 c) 12      d) 8

18. The speed of a jet-plane does not exceed 200 meters/sec. Which of the following is the right expression for the time required by the plane to cover 10 km in the form of an inequality?

- a)  $200t < 10000$   
 b)  $200t \leq 10000$   
 c)  $200t > 10000$   
 d)  $200t \geq 10000$

19. The ages of Safaet, Sajib and Rasel are  $x$ ,  $2x$  and  $4x$  years respectively and if their total age is not more than 91 years -

- i. The inequality of the problem is  $x + 2x + 4x \leq 91$ .  
 ii. The age of Safaet  $\geq 13$  years.

iii. Sum of the ages of the last two  $\leq 78$  years.

Which one of the following is correct?

- a) i and ii      b) i and iii  
 c) ii and iii      d) i, ii and iii

20. 5 times a positive integer is less than the sum of twice the number and 15 in this case inequality is-

- i.  $5x < 2x - 15$   
 ii.  $5x > 2x + 15$   
 iii.  $5x < 2x + 15$

Which one of the following is correct?

- a) I      b) II  
 c) III      d) I, II and III

On the basis of following information answer to the questions No. (21 - 22):

The sum of 6 and the square of a natural number less than 10 is greater than 5 times the natural number.

21. Which of the following will be the expression in inequality of given stimulus?

- a)  $5x + 6 > x^2$       b)  $x^2 + 6 > 5x$   
 c)  $6 + x^2 < 5x$       d)  $5x + 6 < x^2$

22. Which of the following is the possible set of the numbers?

- a) {4, 5, 6, 7, 8, 9}  
 b) {4, 5, 6, 7, 8, 9, 10}  
 c) {4, 5, 6, 7, 8, 9}  
 d) {1, 4, 5, 6, 7, 8, 9, 10}

On the basis of following information answer to the questions No. (23 - 24):

A car runs  $x$  km in 2 hours and  $(x + 140)$  km in 3 hours. The average speed of the car does not exceed 120 km/hour.

23. Which of the following will be the expression in inequality of the given word problem?

- a)  $\frac{x + 2x + 140}{4} \leq 120$   
 b)  $\frac{2x + x + 140}{5} \leq 120$   
 c)  $\frac{x + x + 140}{4} \leq 120$   
 d)  $\frac{x + x + 140}{5} \leq 120$