



MATHS

BOOKS - V PUBLICATION

REAL NUMBERS

Questionbank

1. Find the distance between the two points on the number line, denoted by each pair of numbers given below:

i) 1, - 5.

ii) $\frac{1}{2}, \frac{2}{3}$

iii) $-\frac{1}{2}, -\frac{1}{3}$.

iy) $-\frac{1}{2}, \frac{3}{4}$



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2. Find the mid point of each pair of points. in the first problem.



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3. The part of the number line between the points denoted by the numbers $\frac{1}{3}$ and $\frac{1}{2}$ is divided into four equal parts. The numbers denoted by A, B, C are -



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4. Find the distance between the two points on the number line, denoted by each pair of numbers. given below:

i) 3, - 7

ii) $-3, 7$

iii) $-3, -7$

iv) $3, 7$



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5. Find three points at equal distance between the points on the number line denoted by the numbers $\frac{7}{2}$ and $\frac{10}{3}$.



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6. Find those x satisfying each of the equations below:

i) $|x - 1| = |x - 3|$

ii) $|x - 3| = |x - 4|$

iii) $|x + 2| = |x - 5|$

iv) $|x| = |x + 1|$



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7. Prove that if $1 < x < 4$ and $1 < y < 4$, then

$$|x - y| < 3$$





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8. Prove that if $x < 3$ and $y > 7$, then

$$|x - y| > 4$$



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9. Find two numbers x, y such that

$$|x + y| = |x| + |y|$$



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10. Are there numbers x, y such that

$$|x + y| < |x| + |y|?$$



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11. Are there numbers x, y such that

$$|x + y| > |x| + |y|?$$



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12. What are the numbers x , for which

$$|x - 2| + |x - 8| = 6?$$



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13. What are the numbers x , for which

$$|x - 2| + |x - 8| = 10?$$



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14. Find the distance between each pair of numbers given below on the number line.

(i) 4, 6

(ii) 3, -2

(iii) $-5, -8$

(iv) $\frac{3}{4}, -\frac{5}{6}$



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15. If $|a + 1| = |a + 5|$, $|b - 2| = |b - 6|$, and $|a - x| = |b - x|$ then what is the value of X?



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16. If x is on the number line to the of 3 and $|x - 3| = 0$ thenbr a. What is the value of x ?

br b. What is $|x - 3| + |x - 9|$?



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17. The absolute value of the difference of two numbers is 4 . If one number is 8 , what are the possibilities for the other number?



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18. The end points of one side of an equilateral triangle are -2 and 4 on the number line.

Find the area and perimeter of this triangle.



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19. a) What is the number which gives midpoints of the points denoted by the numbers x and y on the number line.

b) If the numbers x and y are thought of as points on a number line, what is the geometrical meaning of $|x - y|$?

c) Find those x satisfying each of the equations below.

$$\text{i) } |x - 1| = |x - 3|$$

$$\text{ii) } |x - 1| = |x + 3|$$

$$\text{ifi) } |x + 1| = |x - 3|$$



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20. What are the number x which satisfy the equation $|x - 2| + |x - 6| = 4$?



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21. x is a number on the number line. What is the relation of the distance between 5 to x and 3 to x

i) if $|x - 3| = |x - 5|$ on the number line.

ii) If the distance from -1 to x and -7 to x is equal. Then how can we indicate this statement using symbol?

iii) What is the relation of the distance between 1 to x and 7 to x if $|x - 1| = 2|x - 7|$?



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22. a) In the number line, what is the distance between the points representing the numbers 3 and -5 ?
- b) Which number represents the midpoint of these points?



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23. a) If $|x - 2| = 3$, then what is x ?

b) If $|x - 2| = |x - 8|$, then what is $|x - 2| + |x - 8|$?

c) If $|x - 2| + |x - 8| = 6$, then find the integer values of x ?



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24. a) If $x = 5, y = -3$, find

$|x + y|, |x| + |y|$?

b) Write the numbers x and y satisfying the condition' $|x + y| = |x| + |y|$.

c) $|x + y| = |x| + |y|$ and $|x| = -x$, then which among the following is true?

$[|y| = y, |y| = -y, y > 0, x + y = 0]$,



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25. If $|x - 2| = |x - 6|$, what is x ?

If $|y - 3| = |y + 1|$, what is y ?

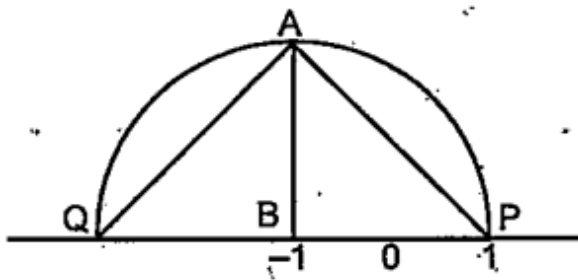
What is $|x - y|$?



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26. A circle is drawn with B as centre. The circle is passing through the points P and Q in the number line. If P , represents 1 and B represents -1

- a) What is the radius of the circle?
- b) Which number represents the point Q?
- c) Find the perimeter of the triangle AQP.



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27. Find $|x| + |y|$ and $|x + y|$ and find the relation between them in each of the following cases..

a) $x = 4, y = 3$

b) $x = 4, y = -3$

c) If $|x| = x$ and $|y| = -y$, what is the relation between $|x| + |y|$ and $|x+y|$?



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28. Find the distance between the two points on the number line, denoted by each pair of numbers. given below:

i) $3, -7$

ii) $-3, 7$

iii) $-3, -7$

iv) $3, 7$



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29. Draw a line and mark five points on it, 3 centimetres apart. Starting from the , mark these points as $-2, -1, 0, 1, 2$. Mark the points on this line showing $-1\frac{2}{3}$ and $\sqrt{2}$.



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30. a) What is the number which gives midpoints of the points denoted by the numbers x and y on the number line.

b) If the numbers x and y are thought of as points on a number line, what is the geometrical meaning of $|x - y|$?

c) Find those x satisfying each of the equations below.

i) $|x - 1| = |x - 3|$

ii) $|x - 1| = |x + 3|$

if) $|x + 1| = |x - 3|$



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31. a) What are the numbers x which satisfy the equation $|x - 2| + |x - 6| = 4$

b) What are the numbers x which satisfy the equation $|x - 2| + |x - 6| = 5$

c) Are there numbers x satisfying the equation $|x - 2| + |x - 6| = 3$? Write the reason.



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32. Find the number on the number line equidistant from the numbers -4 and 8 .



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33. For $x = -6$ and $y = -9$, find

$|x|$, $|y|$, $|x + y|$ and compare these values.



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34. Find the values of x such that $|x - 1| = 3$



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35. The points $-5, 1$ on the number line are the end points of a diameter of a circle.

a) What is the diameter?

b) What number denotes the centre of the circle?



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36. Find the values of $|x - y|$ such that

$$|x - 5| = |x - 9|, |y - 2| = 5.$$



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