

Jender Heart High School, Sec.-33B Ch.

Class : VIII

Subject : Mathematics

Teacher: Deepthi

Topic : "Revision"

Ch-9: Ratio and proportion

ch-16: Inequation

Try all the questions of the given chapters then check the answer

Ques 1. Solve the following inequations and represent them on the number line:

(i) $12 + 3(4x - 3) > x - 23$, $x \in \mathbb{Z}^-$

(ii) $\frac{3}{7} - \frac{x}{3} > -\frac{1}{4}$, $x \in \mathbb{N}$

(iii) $5 + 6x > x - 10$, $x \in \mathbb{N}$

(iv) $-4(x + 5) < 9$, $x < 9$

v) $5x - 11 < 17 - \frac{x}{4}$, $x \in \mathbb{Z}$

Ques 2. a) Find the fourth proportional to

(i) 0.6, 1.5, 3

(ii) $2\frac{1}{2}$, $2\frac{6}{7}$, $3\frac{1}{2}$

(iii) 3 hrs 12 min, 24 min, 1 m 68 cm

Ques 3. a) Find the third proportional to $\frac{1}{9}$, $\frac{2}{3}$

b) Find the mean proportional to $\frac{2}{3}$ and $\frac{8}{27}$

Ques 4. The angles of a triangle are in the ratio 5:6:7. find each angle.

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Quest 5. Divide ₹ 16250 among A, B, C in ratio 5:7:13

Quest 6. The boys and girls in a school are in the ratio 8:3. If the number of girls is 405. how many boys are there?

Quest 7. If $a:b = 3:2$ and $b:c = 4:5$ find $a:c$.

Quest 8. Two numbers are in the ratio 5:8 and their difference is 12. Find the numbers.

Quest 9. Increase 224 in the ratio 7:9

Quest 10. What must be added to each term of the ratio 3:5, so that the new ratio becomes 5:6

Answers

1. (i) $12 + 3(4x - 3) > x - 23$, $x \in \mathbb{Z}^+$

$$12 + 12x - 9 > x - 23$$

$$12x + 3 > x - 23$$

$$12x - x > -23 - 3$$

$$11x > -26$$

$$x > \frac{-26}{11}$$

$$x > -2\frac{4}{11}$$

$$\text{Sol'n set} = \{-2, -1\}$$

(ii) $\frac{3}{7} - \frac{x}{3} > -\frac{1}{4}$

$$\frac{3}{7} + \frac{1}{4} > \frac{x}{3}$$

$$\frac{12+7}{28} > \frac{x}{3}$$

$$\frac{19}{28} \times 3 > x$$

$$\frac{57}{28} > x$$

$$x < 2\frac{1}{28}$$

$$\text{Sol'n set} = \{1, 2\}$$

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(iii) $5 + 6x > x - 10$

$6x - x > -10 - 5$

$-5x > -15$

$x < \frac{-15}{-5}$

$x < 3$

$x = \{1, 2\}$

(iv) $-4(x+5) < 9$

$x+5 > \frac{9}{+4}$

$-(x+5) > +2.25$

$x+5 < -2.25$

$x < -2.25 - 5$

$x < -7.25$

$\text{Sol'n} = \emptyset$

v) $5x - 11 < 17 - \frac{x}{4}$

$\frac{5x+x}{4} < 17+11$

$\frac{20x+x}{4} < 28$

$21x < 28 \times 4$

$x < \frac{28 \times 4}{21}$

$x < \frac{112}{21} \Rightarrow x < 5\frac{2}{3}$

$\text{Sol'n Set} = \{ \dots, -2, -1, 0, 1, 2, 3, 4 \}$

Sol'n-2 a) (ii) $2\frac{1}{2}, 2\frac{6}{7}, 3\frac{1}{2}, x$

$\Rightarrow \frac{5}{2}, \frac{20}{7}, \frac{7}{2}, x$ are in proportion

$\frac{5}{2} \times x = \frac{20 \times 7}{2 \times 2}$

$x = \frac{20 \times 7}{5}$

$x = 4$

(iii)

$3 \text{ hrs } 12 \text{ min} = 192 \text{ min}$

$24 \text{ min} = 24 \text{ min}$

$1 \text{ m } 68 \text{ cm} = 168 \text{ cm}$

$192, 24, 168, x$ are in prop.

$192 \times x = 24 \times 168$

$x = \frac{24 \times 168}{192} = 21$

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Sol'n 3 (b) Let mean prop. be x .

$\Rightarrow \frac{2}{3}, x, \frac{8}{27}$ are in continued prop.

$$x^2 = \frac{2}{3} \times \frac{8}{27} = \frac{16}{81}$$

$$x = \sqrt{\frac{16}{81}} = \boxed{\frac{4}{9}}$$

Sol'n-6 Let the no. of boys = $8x$ and no. of girls = $3x$
A.T.Q $3x = 405$

$$\Rightarrow x = 405/3 = 135$$

$$\Rightarrow \text{no. of boys} = 8x = 8 \times 135 = 1060$$

Sol'n 8 Let the two numbers are $5x$ and $8x$
A.T.Q $8x - 5x = 12$

$$3x = 12$$

$$\Rightarrow \boxed{x = 4}$$

So, the numbers are $5 \times 4 = 20$ and $8 \times 4 = 32$

Sol'n 9. Increase 224 in the ratio 7:9

$$224 : x = 7 : 9$$

$$\Rightarrow 224 \times 9 = 7 \times x$$

$$\Rightarrow \frac{224 \times 9}{7} = x$$

$$\boxed{x = 288}$$

Sol'n 10 Let x should be added to 3:5

$$\Rightarrow \frac{3+x}{5+x} = \frac{5}{6}$$

$$6(3+x) = 5(5+x)$$

$$18 + 6x = 25 + 5x$$

$$6x - 5x = 25 - 18$$

$$\boxed{x = 7}$$

X