

22)
-17
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Rational Numbers

Worksheet

1. (d) $a \neq 0$

2. (b) 1

3. (c) $\frac{-4}{5}$

4. (c) $\frac{16}{20}$

5. (c) unlimited

6. (c) positive integer

7. $\frac{-3}{8}$ is a rational number because it can be expressed in the form of $\frac{a}{b}$ with $a = (-3)$, $b = 8$.

8. right

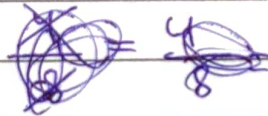
9. less

$$10. \frac{7}{-8} \boxed{<} \frac{8}{9}$$

$$= \frac{(-7)}{8} \boxed{<} \frac{8}{9}$$

$$11. \frac{3}{7} \boxed{>} \frac{(-5)}{6}$$

$$12. \frac{5}{6} \boxed{>} \frac{4}{8}$$



LCM of 6, 8 = 24

$$\frac{2(6), 8}{3, 4}$$

$$\frac{5}{6} = \frac{5 \times 4}{6 \times 4} = \frac{20}{24}$$

$$\frac{4}{8} = \frac{4 \times 3}{8 \times 3} = \frac{12}{24}$$

$$\frac{20}{24} \boxed{>} \frac{12}{24}$$

$$13. \frac{(-9)}{7} < \frac{4}{(-7)}$$



$$\frac{(-9)}{7} < \frac{(-4)}{7}$$

Yes, this statement is true.

$$14. \frac{8}{8} \boxed{=} \frac{2}{2}$$

$$1 \boxed{=} 1$$

$$15. 0$$

$$16. \frac{(-3)}{8} \times x = \frac{(-9)}{16}$$

Let the no be x.

$$x = \frac{(-9)}{16} \div \frac{(-3)}{8}$$

$$= \frac{3}{16} \times \frac{8}{1}$$

$$= \frac{3}{2} = 1\frac{1}{2}$$

17. Cost of $4\frac{1}{2}$ metres of cloth is ₹ $85\frac{1}{2}$.

So, the cost of one metre of cloth = $85\frac{1}{2} \div 4\frac{1}{2}$

$$= \frac{171}{2} \div \frac{9}{2}$$

$$= \frac{19}{1} \times \frac{2}{1} = ₹ 19$$

So, the cost of one metre of cloth is ₹ 19.

$$\begin{array}{r} 0 \\ 85 \\ \times 2 \\ \hline 170 \end{array}$$

$$\begin{array}{r} 19 \\ 9 \overline{) 171} \\ \underline{-90} \\ 81 \end{array}$$

18. total stairs in a stairway = 14

each stair's height = $32\frac{5}{7}$ cm

∴, the vertical height of the stairways =

$$32\frac{5}{7} \times 14$$

$$\begin{array}{r} 32 \\ \times 7 \\ \hline 224 \end{array} = \frac{229}{7} \times \frac{14}{1}$$

$$\begin{array}{r} 229 \\ \times 2 \\ \hline 458 \end{array} = 458 \text{ cm}$$

∴, the vertical height of the stairways is 458 cm.

19. In ascending order

$$\frac{(-7)}{10}, \frac{5}{(-8)}, \frac{2}{(-3)}$$

$$\frac{(-7)}{10}, \frac{(-5)}{8}, \frac{(-2)}{3}$$

$$\text{LCM} = 120$$

$$\frac{(-7)}{10} = \frac{(-7) \times 12}{10 \times 12} = \frac{(-84)}{120}$$

$$\frac{(-2)}{3} = \frac{(-2) \times 40}{3 \times 40} = \frac{(-80)}{120}$$

$$\frac{(-5)}{8} = \frac{(-5) \times 15}{8 \times 15} = \frac{(-75)}{120}$$

In ascending order $\rightarrow \frac{(-7)}{10} < \frac{2}{(-3)} < \frac{5}{(-8)}$

20. Sum of two rational numbers be -5 .

$$\text{one of them} = \frac{(-52)}{25}$$

Let the other no be x .

$$\text{other number} = x + \frac{(-52)}{25} = \frac{(-5)}{1}$$

$$x = \frac{(-5)}{1} - \frac{(-52)}{25}$$

$$= \frac{(-5)}{1} + \frac{52}{25}$$

$$= \frac{(-125) + 52}{25} = \frac{(-73)}{25} = -2 \frac{23}{25}$$

so, the other no be $-2 \frac{23}{25}$.

$$\begin{array}{r} 29 \\ \times 3 \\ \hline 87 \\ 290 \\ \hline 87 \\ 125 \\ -52 \\ \hline 73 \end{array}$$