

Number	Natural	Whole	Integer	Rational
-15			✓	✓
2.5				✓
0		✓	✓	✓
$-\frac{4}{7}$				✓
21	✓	✓	✓	✓

1. Convert the following rational numbers into decimal form. Show as repeating decimals if necessary.

a) $\frac{9}{4} = 2.25$

b) $\frac{7}{9} = 0.\overline{7}$

c) $1\frac{3}{10} = 1.3$

2. Convert the following decimals into rational numbers, in lowest terms

a) $3.2 = 3\frac{2}{10} = 3\frac{1}{5}$

b) $0.19 = \frac{19}{100}$

Simplify the following completely

4. $7 + (-5) - 9 - 3$

$$2 - 9 - 3$$

$$-7 - 3$$

$$\boxed{= -10}$$

5. $(-1 - 7 + 4) - (6 + (-5) - 2)$

$$-4 - (1)$$

$$-4 + 1$$

$$\boxed{= -3}$$

6. $(-8)(-3)(-2) \div (-12)$

$$-48 \div -12$$

$$\boxed{= 4}$$

7. $\frac{-32}{4} - \frac{20}{-5} + \frac{15}{-3}$

$$= -8 + 4 - 5$$

$$\boxed{= -9}$$

8. $56 \div (-7) + (-5)(-6)$

$$-8 + 30$$

$$= 22$$

9. $5 - 2(3 - 9) + 3 \times (-4) + 6$

$$5 - 2(-6) + (-12) + 6$$

$$5 - (-12) - 12 + 6$$

$$17 - 12 + 6$$

$$= 11$$

10. $\frac{3}{10} + \frac{-3}{4} - \left(\frac{-2}{-5}\right)$ LCD=20

$$= \frac{6}{20} + \frac{-15}{20} - \frac{8}{20}$$

$$= \frac{6 - 15 - 8}{20}$$

$$= \frac{-17}{20}$$

12. $\frac{-1}{7} \times \frac{-2}{15}$

$$\frac{-1}{1} \times \frac{-2}{5}$$

$$= \frac{2}{5}$$

11. $\frac{3}{4} - \left(1\frac{1}{5}\right) - \left(\frac{-1}{6}\right)$

$$\frac{3}{4} - \frac{6}{5} + \frac{1}{6}$$
 LCD=60

$$= \frac{45}{60} - \frac{72}{60} + \frac{10}{60}$$

$$= \frac{45 - 72 + 10}{60}$$

$$= \frac{-17}{60}$$

13. $\frac{-3}{5} \div \frac{5}{-6} \div \frac{2}{9}$

$$\frac{-3}{5} \times \frac{-6}{5} \times \frac{9}{8}$$

$$= \frac{81}{25}$$

14. $\frac{-1}{5} \times \frac{-3}{7} \div \frac{-9}{14}$

$$\frac{-1}{5} \times \frac{-3}{7} \times \frac{14}{-9}$$

$$= \frac{-1}{5} \times \frac{-1}{1} \times \frac{2}{3}$$

$$= \frac{-2}{15}$$

15. $\frac{-3}{4} + \frac{2}{-5} \times \frac{-1}{3}$

$$\frac{-3}{4} + \frac{2}{-1} \times \frac{-1}{3}$$

$$= \frac{-3}{4} + \frac{2}{3}$$
 LCD=12

$$= \frac{-9}{12} + \frac{8}{12}$$

$$= \frac{-9 + 8}{12}$$

$$= \frac{-1}{12}$$

$$16. \frac{-2}{5} + \left(\frac{-1}{3} + \frac{-4}{5} \right) \times \frac{-5}{17}$$

$$= \frac{-2}{5} + \left(\frac{-5-12}{15} \right) \times \frac{-5}{17}$$

$$= \frac{-2}{5} \times \frac{1}{3} \times \frac{1}{1} \times \frac{1}{1}$$

$$= \frac{-2}{5} + \frac{1}{3} \quad \text{LCD}=15$$

$$= \frac{-6}{15} + \frac{5}{15}$$

$$= \frac{-1}{15} \quad \text{LCD}=10$$

$$18. \left(\frac{-3}{10} - \frac{1}{2} \right) \div \frac{3}{-5}$$

$$\left(\frac{-3-5}{10} \right) \times \frac{-5}{3}$$

$$\frac{-8}{10} \times \frac{-5}{3}$$

$$= \frac{-4}{1} \times \frac{-1}{3}$$

$$= \frac{4}{3}$$

$$20. \left(\frac{2}{-3} - \frac{1}{4} \right) \div \frac{1}{2} \times \frac{-3}{4}$$

$$= \left(\frac{-8-3}{12} \right) \times \frac{2}{1} \times \frac{-3}{4}$$

$$= \frac{-11}{12} \times \frac{2}{1} \times \frac{-3}{4}$$

$$= \frac{11}{8}$$

$$17. \left(\frac{-4}{5} \right) \left(\frac{-1}{3} \right) + \left(\frac{2}{5} \right) \left(\frac{-1}{2} \right)$$

$$\frac{4}{15} + \frac{-2}{10} \quad \text{LCD}=30$$

$$= \frac{8}{30} - \frac{6}{30}$$

$$= \frac{2}{30}$$

$$= \frac{1}{15}$$

$$19. \frac{5}{-6} \div \frac{-3}{-4} + \frac{2}{5} \times \frac{-3}{4}$$

$$= \frac{5}{-6} \times \frac{4}{3} + \frac{-3}{10}$$

$$= \frac{-10}{9} - \frac{3}{10} \quad \text{LCD}=90$$

$$= \frac{-100-27}{90}$$

$$= \frac{-127}{90}$$

$$21. \frac{7}{3} - 1\frac{1}{2} \div \left(-\frac{2}{5} \right)$$

$$= \frac{7}{3} - \frac{3}{2} \times \frac{-5}{2}$$

$$= \frac{7}{3} + \frac{15}{4} \quad \text{LCD}=12$$

$$= \frac{28}{12} + \frac{45}{12}$$

$$= \frac{73}{12}$$

$$22. \frac{12}{5} \div \frac{8}{-3} - \left(\frac{1}{-4} \right)$$

$$= \frac{12}{5} \times \frac{-3}{8} + \frac{1}{4}$$

$$= \frac{-9}{10} + \frac{1}{4} \quad \text{LCD}=20$$

$$= \frac{-18+5}{20}$$

$$\boxed{= \frac{-13}{20}}$$

$$24. \frac{3}{4} + \frac{-2}{3} \times \left(\frac{2}{5} \right) - \frac{1}{2}$$

$$\frac{3}{4} - \frac{4}{15} - \frac{1}{2} \quad \text{LCD}=60$$

$$\frac{45}{60} - \frac{16}{60} - \frac{30}{60}$$

$$\boxed{= \frac{-1}{60}}$$

$$23. \frac{-3}{5} \left(-\frac{1}{4} + 0.3 \right) - \frac{2}{5}$$

$$= \frac{-3}{5} \left(-\frac{1}{4} + \frac{3}{10} \right) - \frac{2}{5}$$

$$= \frac{-3}{5} \left(\frac{-5+6}{20} \right) - \frac{2}{5}$$

$$= \frac{-3}{5} \times \frac{1}{20} - \frac{2}{5}$$

$$= \frac{-3}{100} - \frac{2}{5} \quad \text{LCD}=100$$

$$= \frac{-3-40}{100} \quad \boxed{= \frac{-43}{100}}$$

$$25. \frac{-1}{3} + \frac{3}{4} \quad \text{LCD}=12$$

$$\frac{1}{2} - \frac{3}{5} \quad \text{LCD}=10$$

$$= \frac{-4+9}{12}$$

$$\frac{5-6}{10}$$

$$= \frac{5}{12} + \frac{-1}{10}$$

$$= \frac{5}{12} \times \frac{10}{1}$$

$$= \frac{-50}{12}$$

$$\boxed{= \frac{-25}{6}}$$