

2. Multiplication and Division of Integers

Practice Set 8

■ **Multiply.**

(i) $(-5) \times (-7)$

Solution: $(-5) \times (-7) = 35$

(ii) $(-9) \times (6)$

Solution: $(-9) \times (6) = -54$

(iii) $(9) \times (-4)$

Solution: $(9) \times (-4) = -36$

(iv) $(8) \times (-7)$

Solution: $(8) \times (-7) = -56$

(v) $(-124) \times (-1)$

Solution: $(-124) \times (-1) = 124$

(vi) $(-12) \times (-7)$

Solution: $(-12) \times (-7) = 84$

(vii) $(-63) \times (-7)$

Solution: $(-63) \times (-7) = 441$

(viii) $(-7) \times (15)$

Solution: $(-7) \times (15) = -105$

Practice Set 9

1. Solve :

(i) $(-96) \div 16$

Solution: $(-96) \div 16$

$$- \frac{96}{16} = (-1) \times \frac{6 \times 16}{16}$$

$$= (-1) \times 6$$

$$= -6$$

$$\therefore (-96) \div 16 = -6$$

(ii) $98 \div (-28)$

Solution: $98 \div (-28)$

$$\begin{aligned}\frac{98}{-28} &= \frac{1 \times 7 \times 14}{(-1) \times 2 \times 14} \\&= \left(\frac{1}{-1}\right) \times \frac{7}{2} \times \frac{14}{14} \\&= (-1) \times \frac{7}{2} \times 1 \\&= (-1) \times \frac{7}{2} \\&= -\frac{7}{2}\end{aligned}$$

$$\therefore 98 \div (-28) = -\frac{7}{2}$$

(iii) $(-51) \div 68$

Solution: $(-51) \div 68$

$$\begin{aligned}\frac{-51}{68} &= \frac{(-1) \times 3 \times 17}{1 \times 4 \times 17} \\&= (-1) \times \frac{3}{4} \times 1 \\&= \frac{-3}{4}\end{aligned}$$

$$\therefore (-51) \div 68 = \frac{-3}{4}$$

(iv) $38 \div (-57)$

Solution: $38 \div (-57)$

$$\frac{38}{-57} = \frac{1 \times 2 \times 19}{(-1) \times 3 \times 19}$$

$$= (-1) \times \frac{2}{3} \times 1$$

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

$$\therefore 38 \div (-57) = \frac{-2}{3}$$

(v) $(-85) \div 20$

Solution: $(-85) \div 20$

$$\frac{-85}{20} = \frac{(-1) \times 5 \times 17}{1 \times 5 \times 4}$$

$$= (-1) \times 1 \times \frac{17}{4}$$

$$= \frac{-17}{4}$$

$$\therefore (-85) \div 20 = \frac{-17}{4}$$

(vi) $(-150) \div (-25)$

Solution: $(-150) \div (-25)$

$$\begin{aligned}\frac{-150}{-25} &= \frac{(-1) \times 6 \times 25}{(-1) \times 25} \\ &= 1 \times 6 \times 1 = 6\end{aligned}$$

$$\therefore (-150) \div (-25) = 6$$

(vii) $100 \div 60$

Solution: $100 \div 60$

$$\begin{aligned}\frac{100}{60} &= \frac{10 \times 10}{10 \times 6} \\ &= 1 \times \frac{2 \times 5}{2 \times 3} \\ &= 1 \times \frac{5}{3} = \frac{5}{3} \\ \therefore 100 \div 60 &= \frac{5}{3}\end{aligned}$$

(viii) $9 \div (-54)$

Solution: $9 \div (-54)$

$$\frac{9}{-54} = \frac{1 \times 9}{(-1) \times 6 \times 9}$$

$$= \frac{1}{-1} \times \frac{1}{6} \times 1$$

$$= \frac{-1}{6}$$

$$\therefore 9 \div (-54) = \frac{-1}{6}$$

(ix) $78 \div 65$

Solution: $78 \div 65$

$$\frac{78}{65} = \frac{1 \times 13 \times 6}{1 \times 13 \times 5}$$

$$= \frac{6}{5}$$

$$\therefore 78 \div 65 = \frac{6}{5}$$

(x) $(-5) \div (-315)$

Solution: $(-5) \div (-315)$

$$\frac{-5}{-315} = \frac{(-1) \times 5}{(-1) \times 5 \times 63}$$

$$= 1 \times 1 \times \frac{1}{63}$$

$$= \frac{1}{63}$$

$$\therefore (-5) \div (-315) = \frac{1}{63}$$

2 . Write three divisions of integers such that the fractional form of each will be $\frac{24}{5}$.

Ans.

(i) $240 \div 50$

$$\frac{240}{50} = \frac{1 \times 10 \times 24}{1 \times 10 \times 5} = 1 \times 1 \times \frac{24}{5} = \frac{24}{5}$$

(ii) $(-48) \div (-10)$

$$\frac{-48}{-10} = \frac{(-1) \times 24 \times 2}{(-1) \times 5 \times 2} = 1 \times \frac{24}{5} \times 1 = \frac{24}{5}$$

(iii) $(-72) \div (-15)$

$$\frac{-72}{-15} = \frac{(-1) \times 3 \times 24}{(-1) \times 3 \times 5} = 1 \times 1 \times \frac{24}{5} = \frac{24}{5}$$

3 . Write three divisions of integers such that the fractional form of each will be $\frac{-5}{7}$.

Ans.

(i) $(-50) \div 70$

$$\frac{-50}{70} = \frac{(-1) \times 10 \times 5}{10 \times 7} = \frac{(-1) \times 5}{7} = \frac{-5}{7}$$

(ii) $(-15) \div 21$

$$\frac{-15}{21} = \frac{(-1) \times 5 \times 3}{7 \times 3} = (-1) \times \frac{5}{7} \times 1 = \frac{-5}{7}$$

(iii) $(20) \div (-28)$

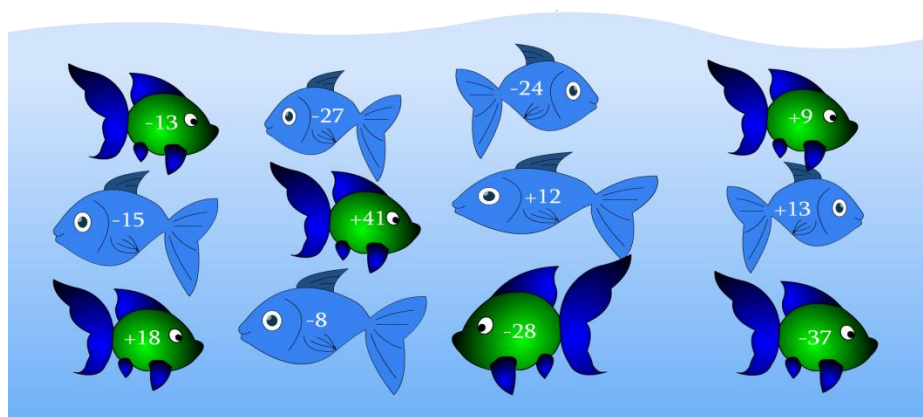
$$\frac{20}{-28} = \frac{5 \times 4}{(-1) \times 7 \times 4} = (-1) \times \frac{5}{7} \times 1 = \frac{-5}{7}$$

4. The fish in the pond below, carry some numbers. Choose any 4 pairs and carry out four multiplications with those numbers. Now, choose four other pairs and carry out divisions with these numbers.

For example,

$$1. (-13) \times (-15) = 195$$

$$2. (-24) \div 9 = \frac{-24}{9} = \frac{-8}{3}$$



Ans.

(1) Multiplications of numbers :

$$(i) 12 \times (-8) = -96$$

$$(ii) (-27) \times (41) = -1107$$

$$(iii) (13) \times (-37) = -481$$

$$(iv) (-15) \times (+9) = (-135)$$

(2) Divisions of numbers :

$$\text{(i) } (-15) \div (-18) = \frac{-15}{-18} = \frac{-5 \times 3}{-6 \times 3} = \frac{-5}{-6} \times \frac{3}{3} = \frac{5}{6} \times 1 = \frac{5}{6}$$

$$\text{(ii) } (12) \div (-8) = \frac{12}{-8} = \frac{4 \times 3}{-4 \times 2} = (-1) \times \frac{3}{2} = \frac{-3}{2}$$

$$\text{(iii) } (-28) \div (-18) = \frac{-28}{-18} = \frac{(-1) \times 7 \times 2 \times 2}{(-1) \times 3 \times 3 \times 2} = 1 \times \frac{7}{3} \times \frac{2}{3} \times 1 = \frac{14}{9}$$

$$\text{(iv) } (-15) \div (+12) = \frac{-15}{12} = \frac{-5 \times 3}{4 \times 3} = \frac{-5}{4} \times \frac{3}{3} = \frac{-5}{4} \times 1 = \frac{-5}{4}$$
