1. What fraction of each of the following figure is shaded?

(i)

(ii)

(iii)

(iv)

Solution:

(i) In the given figure, the shaded fraction is 2 / 8 = 1 / 4

(ii) In the given figure, the shaded fraction is 3 / 10

(iii) In the given figure, the shaded fraction is 5 / 12

(iv) In the given figure, the shaded fraction is 7 / 13

2. Evaluate the following:

(i) (4 / 3) + (7 / 8)

(ii) $8\frac{1}{2} - 3\frac{5}{8}$

(iii) (5 / 12) + (1 / 18) – (2 / 9)

Solution:

(i) (4 / 3) + (7 / 8)

L.C.M. of 3, 8 is 24, we get,

= (32 + 21) / 24

= 53 / 24

We get,

= $2\frac{5}{24}$

(ii) $8\frac{1}{2} - 3\frac{5}{8}$

This can be written as,

= (17 / 2) – (29 / 8)

L.C.M. of 2, 8 is 8, we get,

= (68 – 29) / 8
= 39 / 8
We get,
= $4\frac{7}{8}$
(iii) (5 / 12) + (1 / 18) – (2 / 9)
L.C.M. of 12, 18, 9 is 36, we get,
= (15 + 2 – 8) / 36
= (17 – 8) / 36
= 9 / 36
Dividing both numerator and denominator by 9, we get,
= (9 ÷ 9) / (36 ÷ 9)
We get,
= 1 / 4

3. Evaluate the following:
(i) 7 × (3 / 5)
(ii) 21 × (3 / 14)
(iii) $3\frac{2}{5}$ **× 8**
(iv) 5 × $6\frac{3}{4}$
Solution:
(i) 7 × (3 / 5)
On simplification, we get,
= 21 / 5
= $4\frac{1}{5}$
(ii) 21 × (3 / 14)
On further calculation, we get,
= 9 / 12
= $4\frac{1}{2}$
(iii) $3\frac{2}{5}$ × 8
This can be written as,
= (17 / 5) × 8
On calculating further, we get,
= 136 / 5

$= 27\frac{1}{5}$

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

This can be written as,

$= 5 \times (27 / 4)$

$= 135 / 4$

We get,

$= 33\frac{3}{4}$

4. Find the reciprocal of each of the following:

(i) 3 / 7

(ii) 13 / 9

(iii) 8

Solution:

(i) The reciprocal of 3 / 7 is 7 / 3

(ii) The reciprocal of 13 / 9 is 9 / 13

(iii) The reciprocal of 8 is 1 / 8

5. Write the following numbers in the expanded form:

(i) 20.03

(ii) 200.03

(iii) 2.034

Solution:

(i) 20.03

The expanded form of the given decimal is shown below,

$= 2 \times 10 + 0 \times 1 + 0 \times (1 / 10) + 3 \times (1 / 100)$

(ii) 200.03

The expanded form of the given decimal is shown below,

$= 2 \times 100 + 0 \times 10 + 0 \times 1 + 0 \times (1 / 10) + 3 \times (1 / 100)$

(iii) 2.034

The expanded form of the given decimal is shown below,

$= 2 \times 1 + 0 \times (1 / 10) + 3 \times (1 / 100) + 4 \times (1 / 1000)$

6. Find the following:

(i) 2.7 × 4

(ii) 2.71 × 5

(iii) 2.5 × 0.3

(iv) 2.3 × 4.35

(v) 238.06 × 7.5
(vi) 0.79 × 32.4
(vii) 1.07 × 0.02
(viii) 10.05 × 1.05
Solution:
(i) 2.7 × 4
= (27 / 10) × 4
= 108 / 10
= 10.8

(ii) 2.71 × 5
On calculation, we get,
= (271 / 100) × 5
= 1355 / 100
We get,
= 13.55

(iii) 2.5 × 0.3
On further calculation, we get,
= (25 / 10) × (3 / 10)
= 75 / 100
We get,
= 0.75

(iv) 2.3 × 4.35
On further calculation, we get,
= (23 / 10) × (435 / 100)
=10005 / 1000
We get,
= 10.005

(v) 238.06 × 7.5
On simplification, we get,
= (23806 / 100) × (75 / 10)
23806
× 75
_____
119030
1666420

1785450

= 1785450 / 1000
We get,
= 1785.45

(vi) 0.79 × 32.4
On further calculation, we get,
= (79 / 100) × (324 / 10)

```
   324
×   79
_______
  2916
22680
_______
25596
```

= 25596 / 1000
We get,
= 25.596

(vii) 1.07 × 0.02
On simplification, we get,
= (107 / 100) × (2 / 100)
= 214 / 10000
We get,
= 0.0214

(viii) 10.05 × 1.05
On calculating, we get,
= (1005 / 100) × (105 / 100)

```
  1005
 ×105
 _____
  5025
100500
_______
105525
```

= 105525 / 10000
We get,
= 10.5525

7. Simplify the following:
(i) (3 / 5) of $1\frac{1}{9} + 3\frac{1}{2}$
(ii) (4 / 5) × $2\frac{3}{8}$ - 2 × (3 / 5)
(iii) {(4 / 5) + 2}{3 – (2 / 3)}
Solution:
(i) (3 / 5) of $1\frac{1}{9} + 3\frac{1}{2}$
This can be written as,
= (3 / 5) of (10 / 9) + (7 / 2)
= (3 / 5) × (10 / 9) + (7 / 2)
We get,
= (2 / 3) + (7 / 2)
L.C.M. of 3, 2 is 6, we get,
= (4 + 21) / 6
= 25 / 6
= $4\frac{1}{6}$

(ii) (4 / 5) × $2\frac{3}{8}$ - 2 × (3 / 5)
This can be written as,
= (4 / 5) × (19 / 8) – 2 × (3 / 5)
We get,
= (19 / 10) – (6 / 5)
L.C.M. of 10, 5 is 10, we get,
= (19 – 12) / 10
We get,
= (7 / 10)
(iii) {(4 / 5) + 2}{3 – (2 / 3)}
On simplification, we get,
= {(4 + 10) / 5} × {(9 – 2) / 3}
= (14 / 5) × (7 / 3)
= (14 × 7) / (5 × 3)
We get,

= 98 / 15

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