EXERCISE 15(A)

1. Write the number of decimal places in each of the following:
(i) 7.03
(ii) 0.509
(iii) 146.2
(iv) 0.0065
(v) 8.03207
Solution:
The number of decimal places in a number is the count of digits in its decimal part.
(i) 7.03
The decimal part of the number 7.03 is .03
7.03 has 2 digits in the decimal part
Therefore, 7.03 has 2 decimal places
(ii) 0.509
The decimal part of the number 0.509 is .509
0.509 has 3 digits in the decimal part
Therefore, 0.509 has 3 decimal places
(iii) 146.2
The decimal part of the number 146.2 is .2
146.2 has 1 digit in the decimal part
Therefore, 146.2 has 1 decimal place
(iv) 0.0065
The decimal part of the number 0.0065 is .0065
0.0065 has 4 digits in the decimal part
Therefore, 0.0065 has 4 decimal places
(v) 8.03207
The decimal part of the number 8.03207 is .03207
8.03207 has 5 digits in the decimal part
Therefore, 8.03207 has 5 decimal places

2. Convert the given unlike decimal fractions into like decimal fractions:
(i) 1.36, 239.8 and 47.008
(ii) 507.0752, 8.52073 and 0.808
(iii) 459.22, 7.03093 and 0.200037
Solution:
The like decimal fractions are the numbers that have same number of decimal places. The numbers of decimal places are made equal by adding zeros in the end of number.
(i) 1.36, 239.8 and 47.008
The maximum number of decimal places is in 47.008

It has 3 decimal places
1.36 = 1.360
239.8 = 239. 800
47.008 = 47.008
Hence, the like decimal fractions are 1.360, 239.800 and 47.008
(ii) 507.0752, 8.52073 and 0.808
The maximum number of decimal places is in 8.52073
It has 5 decimal places
507.0752 = 507.07520
8.52073 = 8.52073
0.808 = 0.80800
Hence, the like decimal fractions are 507.07520, 8.52073 and 0.80800
(iii) 459.22, 7.03093 and 0.200037
The maximum number of decimal places is in 0.200037
It has 6 decimal places
459.22 = 459.220000
7.03093 = 7.030930
0.200037 = 0.200037
Hence, the like decimal fractions are 459.220000, 7.030930 and 0.200037

3. Change each of following fractions to a decimal fraction:
(i) 7 / 10
(ii) 47 / 10
(iii) 343 / 100
(iv) $3 / 10^3$
(v) $7295 / 10^5$
Solution:
If a fraction has the numbers like 10, 100, 1000 in its denominator, then to convert into the decimal, the numerator is marked with a decimal point after as many digits from the right as number of zeros in denominator
(i) 7 / 10
To convert into decimal number
Here, number of zeros is 1
Therefore, decimal form of 7 / 10 is 0.7
(ii) 47 / 10
To convert into decimal number
Here, number of zeros is 1
Therefore, decimal form of 47 / 10 is 4.7
(iii) 343 / 100

To convert into decimal number
Here, the number of zeros is 2
Therefore, the decimal form of 343 / 100 is 3.43
(iv) $3 / 10^3$
To convert into decimal number
$= 3 / 10 \times 10 \times 10$
$= 3 / 1000$
Here, number of zeros is 3
Therefore, decimal form of $3 / 10^3$ is 0.003
(v) $7295 / 10^5$
To convert into decimal number
$= 7295 / 10 \times 10 \times 10 \times 10 \times 10$
$= 7295 / 100000$
Here, number of zeros is 5
Therefore, decimal form of $7295 / 10^5$ is 0.07295

4. Convert into a decimal fraction:
(i) 3 / 4
(ii) 3 / 40
(iii) 1 / 125
(iv) 7 / 25
Solution:
For denominator having no zeros, the denominator and numerator are first multiplied by a factor that makes the number 10 or some power of 10
(i) 3 / 4
To convert into decimal fraction
Multiply and divide the fraction by 25
$= (3 \times 25) / (4 \times 25)$
We get,
$= 75 / 100$
Here, number of zeros is 2
Therefore, the decimal form is 0.75
(ii) 3 / 40
To convert into decimal fraction
Multiply and divide the fraction by 25
$= (3 \times 25) / (40 \times 25)$
We get,
$= 75 / 1000$
Here, number of zeros is 3

Therefore, decimal form is 0.075
(iii) 1 / 125
To convert into decimal fraction
Multiply and divide the fraction by 8
= (1 × 8) / (125 × 8)
We get,
= 8 / 1000
Here, number of zeros is 3
Therefore, decimal form is 0.008
(iv) 7 / 25
To convert into decimal fraction
Multiply and divide the fraction by 4
= (7 × 4) / (25 × 4)
We get,
= 28 / 100
Here, number of zeros is 2
Therefore, decimal form is 0.28

5. Change the given decimals fractions to fraction s in their lowest terms:
(i) 0.05
(ii) 3.95
(iii) 4.005
(iv) 0.876
(v) 50.06
Solution:
(i) 0.05
To convert 0.05 into fraction
Here, the decimal part of the number has 2 digits in the decimal part
Divide the number by 100 and remove the decimal part
We get,
= 5 / 100
= 1 / 20
Therefore, 1 / 20 is the fraction of 0.05
(ii) 3.95
To convert 3.95 into fraction
Here, the decimal part of the number has 2 digits in the decimal part
Divide the number by 100 and remove the decimal
We get,
= 395 / 100

= 79 / 20

= $3\frac{19}{20}$

Therefore, $3\frac{19}{20}$ is the fraction of 3.95

(iii) 4.005

To convert 4.005 into fraction

Here, the decimal part of the number has 3 digits in the decimal part

Divide the number by 1000 and remove the decimal

We get,

= 4005 / 1000

= 801 / 200

= $4\frac{1}{200}$

Therefore, $4\frac{1}{200}$ is the fraction of 4.005

(iv) 0.876

To convert 0.876 into fraction

Here, the decimal part of the number has 3 digits in the decimal part

Divide the number by 1000 and remove the decimal

We get,

= 876 / 1000

= 219 / 250

Therefore, 219 / 250 is the fraction of 0.876

(v) 50.06

To convert 50.06 into fraction

Here, the decimal part of the number has 2 digits in the decimal part

Divide the number by 100 and remove the decimal

We get,

= 5006 / 100

= 2503 / 50

= $50\frac{3}{50}$

Therefore, $50\frac{3}{50}$ is the fraction of 50.06