Q1. Write the following in decimal form and say what kind of decimal expansion each has: $\sqrt{5}$

(i) $\dfrac{36}{100}$

(ii) $\dfrac{1}{11}$

(iii) $4\dfrac{1}{8}$

(iv) $\dfrac{3}{13}$

(v) $\dfrac{2}{11}$

(vi) $\dfrac{329}{400}$

Ans: (i) $\dfrac{36}{100}$

On dividing 36 by 100, we get

```
        0.36
100)    36
       −0
        360
       −300
        600
       −600
        0
```

Therefore, we conclude that $\dfrac{36}{100} = 0.36$, which is a terminating decimal.

(ii) $\dfrac{1}{11}$

On dividing 1 by 11, we get

```
           0.0909....
      11)         1
                 −0
                 10
                 −0
                100
                −99
                 10
                 −0
                100
                −99
                  1
```

We can observe that while dividing 1 by 11, we got the remainder as 1, which will continue to be 1.

Therefore, we conclude that $\dfrac{1}{11} = 0.0909.....$ or $\dfrac{1}{11} = 0.\overline{09}$, which is a non-terminating decimal and recurring decimal.

(iii) $4\dfrac{1}{8} = \dfrac{33}{8}$

On dividing 33 by 8, we get

```
        4.125
     8) ‾‾33‾‾
        −32
         10
         −8
         20
        −16
         40
        −40
          0
```

We can observe that while dividing 33 by 8, we got the remainder as 0.

Therefore, we conclude that $4\frac{1}{8} = \frac{33}{8} = 4.125$, which is a terminating decimal.

(iv) $\frac{3}{13}$

On dividing 3 by 13, we get

```
        0.230769....
13)          3
           −0
           30
          −26
           40
          −39
           10
           −0
          100
          −91
           90
          −78
          120
         −117
            3
```

We can observe that while dividing 3 by 13 we got the remainder as 3, which will continue to be 3 after carrying out 6 continuous divisions.

Therefore, we conclude that

$\dfrac{3}{13} = 0.230769.....$ or $\dfrac{3}{13} = 0.\overline{230769}$, which is a non-terminating decimal and recurring decimal.

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