**WEEK TWO**

**FRACTIONS, PERCENTAGES AND DECIMALS**

**Identify and Classify Decimals as Terminating, Non terminating and Recurring Decimals**

Fractions like 3/5, 1/2, 3/8 can be converted into decimals and they end or terminate: 3/5 = 0.6, ½ = 0.5 and 3/8 = 0.375.

Fractions like 2/3, 2/15, 1/11 do not end or terminate when converted into decimals, 2/3 = 0.66666…, 2/15 = 0.133333… and 1/11 = 0.090909…

These decimals are referred to as **recurring decimals**

**Exercise**

**1.** Write the following fractions as decimals:

(a) 3/8 (b) 7/10 (c) 17/50 (d) 13/25

**2.** Write the following as fractions in their lowest terms:

(a) 0.25 (b) 0.08 (c) 0.35 (d) 0.125

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**3.** Write the following fractions as recurring decimals:

(a) 2/11 (b) 1/3 (c) 1/6 (d) 7/9

**Convert Recurring Decimals into Fractions**

Recurring decimals can be converted into fractions.

**Example:**

Convert this recurring decimal into a fraction: 0.333…….

Note that the decimal repeats itself after one decimal place.

Let r = 0.333…. (1)

Multiply both sides of the equation by 10 i.e. 10 x r = 10 x 0.333

10r = 3.333 (2)

Subtract equation (1) from equation (2):

That is, 10r = 3.333

- (r = 0.333)

9r = 3

r = 3/9 = 1/3.

**Exercise**

1. Convert the following recurring decimals into fractions

a) 0.77---, b) 0.133--- , c)1.25656 ---, d) 0.2727 ---, e) 0.01313

2. Convert the following numbers into recurring decimals

**Calculating the Percentage of a Given Quantity**

The percentage of a quantity can always be calculated in terms of percentage increase or percentage decrease.

**Example 1**: Find the 10⁒ of 50,000

**Solution:**

10/100 x 50,000 = 5,000.

**Example 2:** Opio had 60 goats. Now he has 63 goats. What is the percentage increase?

**Solution:** The increase in the number of goats is 63 – 60 = 3.

Percentage increase is 3/60 x 100 = 5⁒.

**Working out Real-life Problems Involving Percentages**

**Exercise**

1. In a closing-down sale, a shop offers 50% cut of the original prices. What fraction is taken off the prices?

2. In a survey one in five people said they preferred a particular brand of Coca Cola. What is this figure as a percentage?

3. Peter pays tax at the rate of 25% of his income. What fraction of Peter’s income is this?

4. When Carol was buying a house, she had to make a deposit of of the value of the house. What percentage was this?

5. I bought a coat in the January sales with price cut of the selling price. What percentage was taken off the price of the coat?

6. Adikinyi bought some fabric that was 1.75 metres long. How could this be written as a fraction?

7. A car park contains 20 spaces. There are 17 cars parked in the car park.

a). What fraction of the car park is full?

b). What fraction of the car park is empty?

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