

SMART EXAM RESOURCES

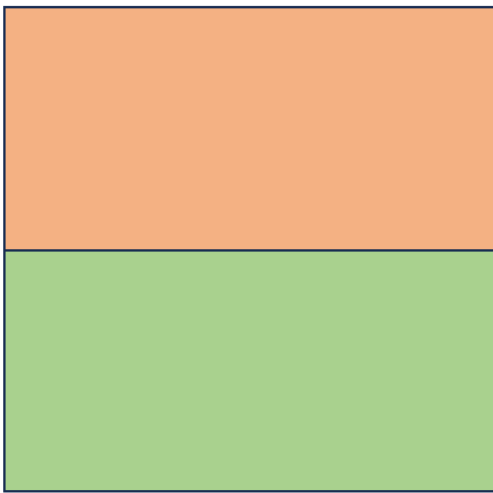
REVISION NOTES

TOPIC: EQUIVALENCE OF FRACTIONS

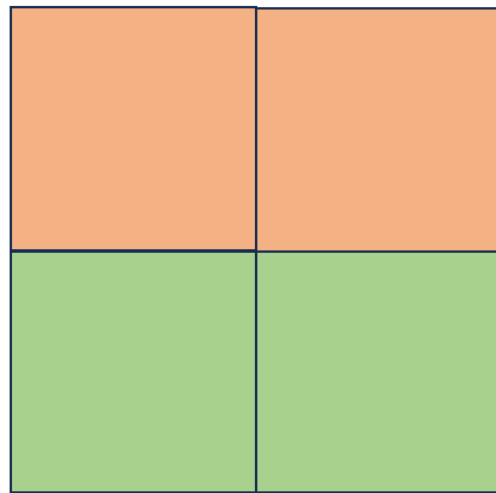
- Recognise equivalence and convert between these forms.

Definition: Equivalent fractions are fractions that represent the same value, even though they look different.

Examples:



$$\frac{1}{2}$$



$$\frac{2}{4}$$

- In the above diagram, the left hand side shows one part shaded out of two equal parts.
- This indicates that the green part is one-half.
- The second shape to the right has two squares coloured green out of four equal squares.
- This indicates that the green-parts are equal to two-fourths.
- But, the same proportion of the shape is shaded in total, so these two fractions must be the same. Hence it follows that these two fractions are equivalent fractions.
- We can then write the relation between them as $\frac{1}{2} = \frac{2}{4}$
- So $\frac{1}{2} = \frac{2}{4}$ are called as equivalent fractions.

We can create equivalent fractions in the following way:

Example 1

- Suppose we have an equation as shown below

$$\frac{7}{2} = \frac{14}{4}$$

- In order to make the statement true, that is to prove that these are equivalent fractions, we need to think of the number that was multiplied to the number '7' in the numerator of the LHS fraction, that gave us the number '14' in the RHS numerator of the fraction.
- Obviously this number is 2.
- So then it follows, that to make these fractions, equivalent fractions, we need to multiply the LHS denominator by the number '2'. This gives us the number 4.

We write this number '4' in the denominator of the RHS fraction to get the equivalent fraction.

$$\frac{7}{2} = \frac{14}{4}$$

Example 2

- Suppose we have an equation as shown below

$$\frac{1200}{240} = \frac{60}{12}$$

- In order to make the statement true, that is to prove that these are equivalent fractions, we need to think of the number that divided 1200 in the numerator of the LHS fraction, that gave us the number '60' in the RHS numerator of the fraction.
- Obviously this number is 20 [1200/20=60]
- So then it follows, that to make these fractions, equivalent fractions, we need to divide the LHS denominator by the number '20'. This gives us the number '12'. [240/20=12]

We write this number '12' in the denominator of the RHS fraction to get the equivalent fraction.

$$\frac{1200}{240} = \frac{60}{12}$$