Fractions lesson 1 - Equivalent Fractions and Simplifying

Magic Monk Tutorials

1 Simplify the following fractions.

1.1 $\frac{20}{300}$

Note that both the numerator and denominator can be divided by 20. Divide both sides of the fraction by 20 to simplify it.

$$\frac{20}{300} = \frac{20 \div 20}{300 \div 20} = \frac{1}{15}$$

1.2 $\frac{12}{22}$

Note that both the numerator and denominator share a factor of 2. Divide both sides of the fraction by 2.

$$\frac{12}{22} = \frac{12 \div 2}{22 \div 2} = \frac{6}{11}$$

1.3 $\frac{20}{35}$

Both the numerator and denominator share a common factor of 5. Divide both sides of the fraction by 5.

$$\frac{20}{35} = \frac{20 \div 5}{35 \div 5} = \frac{4}{7}$$

1.4 $\frac{11}{121}$

By noting that $121 = 11^2$, we may divide both sides of the fraction by 11.

$$\frac{11}{121} = \frac{11 \div 11}{121 \div 11} = \frac{1}{11}$$

1.5 $\frac{122}{322}$

Note that both the numerator and denominator share a factor of 2. Divide both sides of the fraction by 2.

$$\frac{122}{322} = \frac{122 \div 2}{322 \div 2} = \frac{61}{161}$$

Since 61 is a prime number, this is as simplified as the above fraction can be.

2 Can the following fraction be simplified?

2.1 $\frac{13}{31}$

No. This is because 13 and 31 share no common divisors, as they are both prime.

2.2 $\frac{2}{5}$

No. This is because 13 and 31 share no common divisors, as they are both prime.